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IMPLEMENTATION OF THE EXISTING PARTICULATE MATTER AND OZONE AIR QUALITY STANDARDS

HEARING

BEFORE THE

SUBCOMMITTEE ON CLEAN AIR, CLIMATE CHANGE, AND NUCLEAR SAFETY

OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

NOVEMBER 10, 2005

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CONTENTS

Page

NOVEMBER 10, 2005

OPENING STATEMENTS

WITNESSES

ADDITIONAL MATERIAL

IMPLEMENTATION OF THE EXISTING PARTICULATE MATTER AND OZONE AIR QUALITY STANDARDS

THURSDAY, NOVEMBER 10, 2005

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN AIR, CLIMATE CHANGE,
AND NUCLEAR SAFETY,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:30 a.m. in room 406, Senate Dirksen Building, Hon. George V. Voinovich (chairman of the subcommittee) presiding.

Present: Senators Voinovich, Inhofe, DeMint, Isakson, Carper, and Lautenberg.

Senator VOINOVICH. The meeting will please come to order.

OPENING STATEMENT OF HON. GEORGE V. VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

Good morning and thank you all for coming. Today, we are discussing implementation of the existing particulate matter and ozone air quality standards. This is the second hearing on this important topic, as we held a similar one on April 1, 2004, before EPA designated 495 counties across the Nation, 38 in my State of Ohio, as in nonattainment for either one or both of the standards. As I stated at that hearing, this is not about the standards. They are what they are and the counties across the country need to meet them.

Our focus must be on meeting standards in a way that does not further degrade our competitiveness. We are at a crossroads. The decisions and investments we make today will determine the competitiveness of the United States for future generations. While innovation and productivity has traditionally been the source of our Nation's preeminence, the gap between us and the rest of the world is closing quickly.

Before it is too late, we must put forth a comprehensive vision of how we will remain competitive in the global economy. Of our challenges, none is more pressing than energy. I would like to refer to the fact that we need a second Declaration of Independence, energy independence. This entails a national commitment to become more independent of foreign sources of energy by harmonizing our Nation's energy, environmental and economic policies.

All of these policies play an integral role in the implementation of our Nation's air quality standards. This was clearly stated by

Cincinnati Chamber of Commerce President, Michael Fisher at the 2004 hearing.

"Our businesses face a confusing series of environmental laws and regulations that often lead to miscommunication, regulatory uncertainty, lost business investment and even higher energy costs. Simply stated, conducting business in an area designated as nonattainment is more complicated, more time-consuming and costly."

As a former Governor who brought all of Ohio's counties into attainment, I understand firsthand that these standards are an unfunded mandate on our State and local governments and we need to do all we can to help them come into compliance. The Federal Government needs to let communities know what is required of them, even though State implementation plans are due in June 2007 and April 2008, the particulate matter rule was only proposed this month and the second ozone implementation rule was finalized just yesterday.

The EPA owes an explanation about this delay, because the States need these rules earlier. Is it a lack of manpower, or has the Agency simply been spending too much time on doing analysis of Senator Carper's bill and our manager's amendment on Clear Skies?

Senator CARPER. Time well spent.

[Laughter.]

Senator VOINOVICH. EPA's Clean Air Interstate Rule is a good effort to help by significantly reducing powerplant emissions. But it does not provide the full assistance needed by many areas such as those in moderate attainment, like the city of Cleveland, OH, where I was the mayor. I met with the Ohio EPA Director, Joe Koncelik, several times on this issue and would like to insert into the record testimony that he has provided. Without objection, it is ordered.

[The referenced document follows on page 291.]

Senator VOINOVICH. He continues to emphasize that the Cleveland area cannot attain, and this is an example of many other nonattainment areas in the country, the Cleveland area cannot attain the ozone standards by its deadline of 2010, but could by 2015. He states,

"Ohio believe that the current Federal approach to improving air quality lacks coherency. The federally mandated air pollution control programs are on much longer implementation schedules than the deadlines established by U.S. EPA for States to meet the 8-hour ozone standard. A better balance needs to be struck."

In other words, the implementation schedules go out beyond 2010, but these communities that are not in compliance have to comply by 2010. A better balance is desperately needed in northeast Ohio and other areas where the economy is already struggling. The lack of coherency in our environmental, energy and economic policies is having a major impact, with 100,000 jobs lost in the chemical industry and funding increases desperately needed for the LIHEAP program to help the poor.

Simply put, the chickens have come home to roost. We compartmentalize our different policies, failing to recognize that like Paul's letter to the Romans, Chapter 12, we are all part of the same body. We must start looking at the bigger picture and understand that what we do in one area affects another area. Enacting multi-emissions legislation would provide certain reductions, unlike the legal challenges and delays we have seen with EPA rules, and harmonization between the attainment dates and Federal air policies would also avoid unnecessary harm.

I thank EPA for their presentation recently to this committee on their extensive analysis of the proposals that I just referenced. EPA has also finalized new diesel fuel and engine regulations to substantially reduce diesel emissions. This is going to help nonattainment counties, because on-road and non-road diesel vehicles and engines account for roughly one-half of the nitrogen oxide and particulate matter mobile source emissions nationwide. However, the full impact will take time, because the rules address new engines and the estimated 11 million existing engines have a long life.

I am so very, very pleased that we were able to, working with members of this committee and several other members, to introduce the Diesel Emissions Reduction Act. We are hopeful that we can get that funded, because I think it is going to make a big difference for our country.

I again thank everyone for attending. I look forward to hearing from the witnesses about what's being done or should be done to help States and localities. Due to the impact on our Nation's competitiveness this matter deserves serious attention. I mean, it deserves serious attention.

I can tell you for sure, I have never seen my economy in my State so lousy as it is today. A lot of it has to do with energy. The largest natural gas cost that we've ever seen is just smashing in on the economy of our State. Somehow we have to get all this together. If other States are like mine, we're in trouble and we had better get our act together.

[The prepared statement of Senator Voinovich follows:]

STATEMENT OF SENATOR GEORGE V. VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

The hearing will come to order. Good morning and thank you all for coming.

Today, we are discussing implementation of the existing particulate matter and ozone air quality standards. This is the second hearing on this important topic as we held a similar one on April 1, 2004 before EPA designated 495 counties across the Nation 38 in Ohio as in nonattainment for either one or both of the standards. As I stated at that hearing, this is not about the standards. They are what they are and counties across the country need to meet them.

Our focus must be on meeting the standards in a way that does not further degrade our competitiveness. We are truly at a crossroads. The decisions and investments we make today will determine the competitiveness of the United States for future generations. While innovation and productivity has traditionally been the source of our Nation's preeminence, the gap between us and the rest of the world is closing quickly.

Before it is too late, we must put forth a comprehensive vision of how we will remain competitive in the global economy. Of our challenges, none is more pressing today than energy. We need a Second Declaration of Independence energy independence. This entails a national commitment to become independent of foreign sources of energy by harmonizing our Nation's energy, environmental, and economic policies.

All three of these policies play an integral role in the implementation of our Nation's air quality standards. This was clearly stated by Cincinnati Chamber of Commerce President Michael Fisher at the 2004 hearing: "our businesses face a confusing series of environmental laws and regulations that often lead to miscommunication, regulatory uncertainty, lost business investment, and even higher energy costs Simply stated, conducting business in an area designated as nonattainment is more complicated, more time-consuming, and more costly."

As a former Governor who brought all of Ohio's counties into attainment, I understand firsthand that these standards are an unfunded mandate on our State and local governments. We need to do all that we can to help.

The Federal Government needs to let communities know what is required of them. Even though State implementation plans are due in June 2007 and April 2008, the particulate matter rule was only proposed this month and the second ozone implementation rule was finalized just yesterday. EPA owes us an explanation about this delay because States need these rules earlier.

EPA's Clean Air Interstate Rule is a good effort to help by significantly reducing powerplant emissions, but it does not provide the full assistance needed by many areas such as those in moderate nonattainment like Cleveland.

I have met with Ohio EPA Director Joe Koncelik several times on this issue and would like to insert into the record testimony that he has provided. He continues to emphasize that the Cleveland area cannot attain the ozone standard by its deadline of 2010 but could by 2015. He states, "Ohio believes that the current Federal approach to improving air quality lacks coherency. The federally mandated air pollution control programs are on much longer implementation schedules than the deadlines established by U.S. EPA for States to meet the 8-hour ozone standard. A better balance needs to be struck."

The lack of coherency in our environmental, energy, and economic policies is having a major impact on families and businesses—especially in Northeast Ohio. We must start looking at the bigger picture and understand that what we do in one area affects another.

Enacting multi-emissions legislation would provide certain reductions—unlike the legal challenges and delays we have seen with EPA—rules and harmonization between the attainment dates and Federal air policies so we avoid unnecessary harm. I thank EPA for their presentation recently to this committee on their extensive analyses of the different proposals. I hope that this now allows my good friend and Ranking Member to offer a counterproposal like Chairman Inhofe and I did so we can move forward.

EPA has also finalized new diesel fuel and engine regulations to substantially reduce diesel emissions. This will help nonattainment counties because on-road and non-road diesel vehicles and engines account for roughly one-half of the nitrogen oxide and particulate matter mobile source emissions nationwide. However, the full impact will take time because the rules address new engines and the estimated 11 million existing engines have a long life.

That is why I introduced with several members of this committee the Diesel Emissions Reduction Act to establish voluntary national and State-level grant and loan programs to promote the reduction of diesel emissions. The easy part was getting this broadly supported bill passed as part of the energy bill—now we need to get it funded.

I am pleased to report that an amazing coalition has come together to push for $200 million in fiscal year 2007 and for consolidating all of the diesel emissions reductions programs under this one. I would like to insert into the record letters sent to the President from the major State and local groups and over 200 environmental, industry, public, and labor groups.

I again thank everyone for attending, and I look forward to hearing from the witnesses about what is being done or should be done to help States and localities. Due to the impact on our Nation's competitiveness, this matter deserves serious attention.

Thank you.

Senator VOINOVICH. Senator Carper.

OPENING STATEMENT OF HON. THOMAS R. CARPER, U.S. SENATOR FROM THE STATE OF DELAWARE

Senator CARPER. Mr. Chairman, thank you for calling this hearing, and to each of our witnesses, thank you for joining us. I especially want to welcome Jim Werner, who heads up the Division of our Department of Natural Resources and Environmental Control, which deals with air and waste management. We look forward to his testimony in a few minutes, along with that of each of our other witnesses.

How many counties does Ohio have?

Senator VOINOVICH. Eighty-eight.

Senator CARPER. I think you said they are all in attainment?

Senator VOINOVICH. They were in attainment. Under the new rules, 38 of them are not.

Senator CARPER. All right. We only have three counties in Delaware and none of our counties are in attainment for ozone. In Newcastle County, which is in northern Delaware, where most of our people live, is in nonattainment for particulate matter.

When I was Governor, and we were Governor about the same time, those were great years.

Senator VOINOVICH. Where?

[Laughter.]

Senator CARPER. Not because we were Governor. They were good times for our country.

In fact, he has heard me say this a million times, but when he was chairman of the National Governors Association, I was vice chairman, and when he was chairman of Jobs for America's Graduates, I was his vice chairman. Now that he is Chairman of the subcommittee, I am still his vice chairman. I am sort of getting tired of being second banana.

[Laughter.]

Senator CARPER. But no, he is a good guy to be second banana to.

But when I was Governor, in my State we wrestled, as Governor Voinovich did in his State with what we could do in our respective States to reach attainment. Unfortunately, while there were some steps that we could take to help ourselves, the main source of pollution in my State, my little State of Delaware, comes from beyond our borders.

Today, we are going to discuss the progress that is being made across our Nation in reaching our clean air goals. It is important to remember that there are many places like Delaware that need areas upwind of us to clean up their air so that we can cleanup our own. The standards that we are going to discuss today were issued in 1997, as we know. Here we are in 2005, finally discussing implementing those standards. Now some are suggesting that we should delay implementing those standards even longer.

I believe that we have waited long enough. Under our current schedule, the first marginal areas will be required to reach attainment in 2007. That is 10 years after the standards were set. Areas with even more severe pollution will be required to reach attainment between 2010 and 2021.

I believe we have delayed clean air far too long, and it is time to start seriously addressing it.

Over the past 10 years, we have learned more and more about the significant effects on public health from ozone and particulate matter pollution. The longer we postpone reducing this pollution, the longer we suffer. According to EPA's Web site, these national ambient air quality standards are, I think this is a quote, "are set to protect public health, including the health of sensitive populations such as asthmatics, children and the elderly."

I know a lot of people want to discuss the costs associated with attaining those standards, and meeting them is going to be hard. I appreciate those concerns. But the cost of protecting the public health is far less than the cost of breathing dirty air.

Last, I would like to assert that many of the costs associated with reaching attainment can be averted if State and local officials are given enough time to develop their implementation plans. States have a broad range of tools to use to develop our SIPS. The more time that we are given the more creative we can be.

Yesterday EPA finalized its rules to provide States with the guidance needed to meet the ozone air quality standards. They have yet to finalize their guidance for States to meet the particulate matter standards.

I believe EPA has taken too long getting these rules in place. I know there are extenuating circumstances. But I hope that EPA will prove useful and give States the tools necessary to meet the current attainment deadlines.

Thanks very much, Mr. Chairman.

Senator VOINOVICH. Thank you.

Senator DeMint.

OPENING STATEMENT OF HON. JIM DEMINT, U.S. SENATOR FROM THE STATE OF SOUTH CAROLINA

Senator DEMINT. Thank you, Mr. Chairman. I appreciate the opportunity to speak, and I appreciate our witness, Mr. Wehrum.

I want to ventilate just a little bit, if I can. I warned our witness that I was somewhat frustrated, because as I travel around the State and the country, increasingly I hear from businesses the question, do you even want us to do business in the United States of America. It is almost like we are putting signs on our beaches, go do business somewhere else. With our litigation system, our taxation system and particularly our regulatory system, we are making it increasingly difficult for America to be competitive in a global economy.

There is no Agency that comes up more than the EPA. I have heard often in my State that a company that wants a new distribution center or a new plant could be producing in China before they even got a permit to break ground in my State. That sometimes involves the EPA, Army Corps, or other agencies.

The quality of our air is certainly important, but the quality of life involves having a job and being able to make a living. I think our agencies have to recognize that you are competing as an Agency to be the most efficient regulatory, environmental regulatory agency in the world. I just have deep concerns about the implementation of the standards. In my hometown of Greenville, SC, the EPA has decided that the area's compliance with particulate matter, they have decided that we are not out of attainment but unclassifiable.

I understand that we are the only area in the country that is called unclassifiable. It is because they are using a monitor that does not have the 3 years of data and so instead of leaving us in attainment, they said we were unclassifiable. The siting of the monitor itself is not even according to the EPA guidelines, according to experts. We have been looking at this for months and years. We have had regional EPA people come in, and they have agreed with us. They have agreed the monitor is likely to be out of compliance.

Instead of working with us, they cite all of the regulatory processes that they have to go through, which means they can't help us. But they are willing to listen to everything we have to say.

A designation like this to an area like ours, where we were heavily textile, we are trying to recreate jobs and attract new industry, it just puts a veil of uncertainty over the whole area. Who wants to move in a place that might be closed down by the Federal Government for development? As we look for businesses all over the world, the EPA is holding us back.

I have a large coalition of businesses in the upstate who are willing to do whatever is necessary to fix the problem. There is no resistance there. But the problem is, you can't tell us what the problem is. We don't know what the pollution is. We don't know where it is coming from.

There is no way that increasing the standards is a constructive measure. It would be if you could tell us what the problem is, so that we could address it. But your measures are only punitive. They are not constructive. They are not collaborative, because you can't come and say, here's how to fix the problem. So no matter how much time we spend, no matter how much money we spend, there is no reason to have a measurement system if it is not designed to improve the quality of the environment.

So I have deep, deep reservations about moving ahead with a standard which has no constructive value. I appreciate the intent of the EPA. But to put more people out of business and out of work, using a system that is not improving the environment, it is just hurting people and diminishing our future, makes absolutely no sense. There is no excuse to use procedures and to say that we have to do this because of that, when you can change the procedures and if you can't tell us what we need to change so that we can have America as a good place to do business, with clean air and clean water.

Thank you, Mr. Chairman.

Senator VOINOVICH. Thank you, Senator DeMint.

Senator Lautenberg.

OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator LAUTENBERG. Thanks, Mr. Chairman.

We are kind of at a crossroads here, at least in our discussion thus far. That is that to figure out what it is that our mission is going to be. I listened respectfully to my colleagues, to the Chairman, to be concerned about jobs and business, I am concerned about that. I come out of the business world, and I know what it means to have people working and to be producing revenues.

I have, for instance, a grandchild who has asthma. When I hear him wheezing and I see the panic that crosses his face as he reaches, tries to find an inhaler, and my daughter when he goes to play games, he is 12 years old, and he is athletic, the first thing she does is look for the nearest emergency clinic in case he needs help. There is no price in my view that wouldn't be worth paying to relieve him and the millions of other children who are affected.

So I want to say that our mission, though it has been described differently, is not to kill business. It is not to get jobs exported out of our country. It is, we are talking about health benefits. We have to have these two things coincide in some way to be effective. We have to be concerned about what happens with the health of our people, described as vulnerable parts of the population.

Think about what business responsibilities are. Because no one can say that business is bad in America. Look at what the oil companies just produced. Incredible numbers. Does that mean that therefore we ought to ignore their responsibility to help us keep the air clean or the water clean? Absolutely not.

I know when we see the hot weather and emissions from automobiles and other sources combine to create high levels of ozone, we know what follows, and that is lots more hospital admissions with children. Do we tell these kids, well, you can't play outdoors on summer days, the air is going to make them sick? That's not right. It shows how important it is to implement these new health standards for our air.

Particulate matter in the air is even worse than ozone. It kills thousands of people each and every year. When I was a boy, my father took me to the silk mill where he worked. He said he wanted to introduce me to the fact that he thought that was dangerous, it was a place where your health might be in danger. My father died when he was 43, he got sick when he was 42 and suffered with cancer. My father was a health faddist, even in those days.

So when I look at what we have to do to protect the health of our people, I look at it with a balance, and it isn't simply to say, well, OK, Supreme Court said unanimously that the EPA rules were within the realm of reality and need not be changed, but rather to be enforced. That is not happening. That is my principal concern. It is not, again, intended to be at the expense of business or jobs. No, not at all.

I see other things that accompany this that have to do with our national policy on whether or not we shortcut revenues that are developed in our country that could be invested in things and instead are distributed to those who need it the least, and many who don't even want it.

So we have to get on with meeting reality, and that is, the health benefits must be attended to as promptly as we can. It is not, say, here is better health and here is the end of the jobs in whatever county or whatever town. There are lots of jobs around. We don't want to lose those, however, that we have.

When I dial the credit card company and I get a voice accented much different than that which I traditionally hear, and I know that I'm some place in India, and people are very pleasant, but somebody is not working who would have had that in this country that would have that job otherwise. That has little to do with our environment. It has to do with our capacity to compete.

When I see what General Motors is talking about now, and how close they might be to a bankruptcy condition, I say, where is the leadership in our companies? Well, I don't want to take us too far astray. But I would suggest that we had better look very, very closely at the implementation of standards that have been developed by EPA and approved by the court and get on with figuring out ways how two do that without penalizing the industrial sector of our economy.

Thanks, Mr. Chairman.

Senator VOINOVICH. Thank you, Senator Lautenberg.

Senator Isakson.

OPENING STATEMENT OF HON. JOHNNY ISAKSON, U.S. SENATOR FROM THE STATE OF GEORGIA

Senator ISAKSON. Thank you, Chairman Voinovich. I appreciate the perspective former Governors like yourself and Senator Carper bring in terms of dealing with clean air. I particularly appreciate the perspective that those who are actually on the ground in the local communities doing it bring.

I am very pleased to welcome Commission Chairman Sam Olens, who will be on our second panel. He is the chairman of the County Commission in my home county and the chairman of the Metropolitan Atlanta Planning Agency, the Atlanta Regional Commission. Atlanta has been a poster child for the Clean Air Act for many years. So I think he will bring a great perspective, and he brings great experience to this particular hearing.

As I have stated in previous hearings, 60 percent of my State lives in nonattainment. Twenty-eight counties strung from the rural counties of Catoosa and Walker County in the mountains of northwest Georgia through metropolitan Atlanta down to Muskogee and Columbus, GA have been classified as nonattainment. Sixty percent of the population of our particular State, 5 million people. Air quality is a significant topic in our State, and it is appropriate that the committee talk about it today.

While it is not directly relevant, I guess, to this hearing, I would say I am sorry we haven't yet passed Clear Skies. Because I think a lot of the things you will hear today in the discussions regarding the existing standards and others could have been met better by local communities with the type of legislation and the type of matrix that was presented by the Clear Skies legislation.

In the interest of time, and in the interest of Mr. Wehrum and the others who are here to testify, I will reserve the rest of my remarks for questions, and I thank you very much, Mr. Chairman, for holding this hearing.

[The prepared statement of Senator Isakson follows:]

STATEMENT OF HON. JOHNNY ISAKSON, U.S. SENATOR FROM THE STATE OF GEORGIA

Thank you Chairman Voinovich. I want to commend you and your staff for calling this oversight hearing, and for your leadership and your persistence on this issue. I would like to welcome Sam Olens to the committee. Sam is testifying in our second panel, and is County Commission Chairman in my home county of Cobb. He also is the Chairman of the Atlanta Regional Commission, which is the Metropolitan Planning Organization (MPO) for 18 counties within the 20+ county Atlanta 8-hour ozone and fine particulate matter nonattainment areas.

I have stated this in previous hearings but it bears repeating again: 60 percent of my State of Georgia's population lives in a nonattainment area. That is over 5 million people. 28 of 159 of our counties, including Walker and Catoosa Counties in the mountains, through Metro Atlanta, and down to Muscogee County and the Metro Columbus area, are in nonattainment for particulate matter. 22 of 159 counties over the same geographic area are in nonattainment for ozone. This hearing is very timely, as air quality is an issue that Georgians in my State deal with every day.

While it is not the topic of the hearing today, in my view a fix for these problems would have been passage of the Clear Skies bill. I am hopeful that we, as a committee, can come together and bring to the floor that legislation which in my opinion is better than current law.

In the meantime, I will stop here so that we can get to our witnesses. I look forward to hearing from the panels, thank Chairman Voinovich for his leadership to date, and yield back the balance of my time.

Senator VOINOVICH. Thank you very much.

I am glad that the Chairman of our committee has joined us today, Senator Inhofe.

OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. Thank you, Mr. Chairman. First of all, I appreciate your doing what you are doing. Long before Senator Voinovich came to the Senate, when he was Governor of Ohio, he was considered to be one of the real leading experts in air issues and actually came and testified before our committee as Governor.

I am going to make this very short. I do think it is worth saying that something people forget, particularly some of the extremists, environmentalist groups that over the last 30 years, air pollution has been cut by more than one half. We have had the statistics as to how many more miles are driven and all that. Yet it has been successful, and we should be proud of these accomplishments.

It disturbs me that some of the environmentalist lobbies tend to minimize and obscure this fact. Because I realize these achievements have not been accomplished without cost. Hundreds of billions have been spent. Economies have been slowed and jobs have been lost to achieve these pollution cuts. The burden that many have paid should not be minimized nor what they have accomplished.

Today, we will hear testimony on two very important air quality standards. We will hear testimony on the large number of counties that have been designated as nonattainment with these standards. While coming into attainment will be relatively painless for a few, many areas will experience tremendous hardships through slower growth and job contractions. For instance, a recent study in Philadelphia found that the burden could be enormous. It was conducted by the NERA Economic Consulting, a respected firm that does work for Government, private sector and the environmental communities, and found that meeting its 2010 ozone-attainment deadline will lead to a $3 billion reduction in economic output in the Philadelphia region in 2011. By 2020 the annual cost to the region would be staggering, growing to as much as 60,000 fewer jobs, $8 billion in reduced output and $6 billion in reduced disposable income.

The study also found that simply moving the deadline to 2015 would lower the costs to the local community to $100 million per year and a thousand fewer jobs. This underscores that it is important not only what goals we set, but how we achieve these goals.

Mr. Chairman, as a former Mayor, I recognize how important it is that mandates imposed through Federal law are achievable and flexible in design. I am concerned that such is not the case here. As Ohio EPA Director Joe Koncelik points out in written testimony, northeast Ohio could barely come into attainment by its deadline, even if it shut down all its industry and de-populated the area. Given these realities, a regulatory deadline appears to be arbitrarily inflexible.

The Clear Skies legislation that has been blocked by this committee would address these issues. We have more analyses on multi-emission legislation than we have ever had for any Clear Air bill since the Clean Air Act originally passed. In fact, we have more information than we did even on the original Clean Air Act.

I hope that with the latest analysis conducted by the EPA, we receive a serious proposal to move forward with legislation to further our Nation's clean air progress while building common sense into the way we achieve it. Thank you very much for holding this most significant committee hearing, Mr. Chairman.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF SENATOR JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Thank you for holding this subcommittee hearing, Mr. Chairman. This hearing will provide us with a better understanding on how we are meeting our Nations clean air goals as well as the challenges ahead.

Progress on cutting air pollution is one of the Nation's environmental success stories. Over the last 30 years, air pollution has been cut by more than half. Emissions of each of the six criteria pollutants identified in the Clean Air Act have been dramatically cut. In fact, one of them—lead—has virtually been eliminated.

We should be proud of these accomplishments. It disturbs me that the green lobby tends to minimize and obscure this fact because I realize these achievements have not been accomplished without cost. Hundreds of billions have been spent, economies have been slowed, and jobs have been lost to achieve these pollution cuts. And the burden that many have paid should not be minimized, nor what they have accomplished.

Today, we will hear testimony on two very important air quality standards. We will hear testimony on the large number of counties that have been designated as nonattainment with these standards. And while coming into attainment will be relatively painless for a few, many areas will experience tremendous hardship through slower growth and job contractions.

For instance, a recent study of Philadelphia found that the burden could be enormous. Conducted by NERA Economic Consulting—a respected firm that does work for government, private sector and environmental community—found that meeting its 2010 ozone attainment deadline will lead to a $3 billion reduction in economic output in the Philadelphia region in 2011. By 2020, the annual cost to the region would be staggering—growing to as much as 60,000 fewer jobs, $8 billion in reduced output, and $6 billion in reduced disposable personal income.

The study also found that simply moving the deadline to 2015 would lower the cost to the local economy to $100 million per year and 1,000 fewer jobs. This underscores that it is important not only what goals we set, but how we achieve those goals.

As a former mayor, I recognize how important it is that the mandates imposed through Federal law are achievable and flexibly designed. But I am concerned that such is not the case here. As Ohio EPA Director Joe Koncelik points out in written testimony, Northeast Ohio could barely come into attainment by its deadline even if it shut down all of its industry and depopulated the area. Given these realities, the regulatory deadlines appear arbitrarily inflexible.

The Clear Skies legislation that has been blocked in this committee would address these issues. We have more analyses on multi-emission legislation than we have ever had for any clean air bills since the Clean Air Act originally passed. I hope that, with the latest analysis conducted by EPA, we receive a serious proposal to move forward with legislation to further our Nation's clean air progress while building common sense into the way we achieve it.

Thank you.

Senator VOINOVICH. Thank you, Mr. Chairman.

I just got the statistics. Since 1970, GDP, gross domestic product, is up 187 percent, vehicle miles traveled is up 171 percent, energy consumption is up 47 percent and the population is up 40 percent. At the same time, emissions of the six criteria pollutants are down 54 percent.

Senator INHOFE. That is amazing.

Senator VOINOVICH. So the fact of the matter is that the air is getting cleaner, not dirtier, and the real issue today is, how do we harmonize our, in my opinion, our environmental laws with our energy and with our economy. That is the challenge, I think, that we all have coming before us, particularly with the economy right now that we are confronted with in the United States.

We really are lucky to have Mr. Wehrum here today. He has been before us before, and we thank you for your courtesy and efforts. We are anxious to hear what you have to say, and I think you know what the rules of the committee are, if you can limit your statement to 5 minutes, we would appreciate it. Your entire statement will be put into the record.

STATEMENT OF WILLIAM WEHRUM, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. WEHRUM. Thank you, Chairman Voinovich, Chairman Inhofe, members of the committee. I appreciate the opportunity to speak with you today about the work EPA is doing in partnership with States and local governments to reduce air pollution across the country.

The Clean Air Act has given us important and effective tools for improving the quality of the Nation's air. Key among those tools are the National Ambient Air Quality Standards, designed to protect American public health and the environment from the most pervasive of pollutants.

These common pollutants include ozone and fine particles, which I will focus on today. With your permission, Mr. Chairman, I also would like to submit a longer statement to the record.

Senator VOINOVICH. Without objection, so ordered.

Mr. WEHRUM. At ground level, ozone is unhealthy to breathe, posing the greatest risk to children, asthmatics and adults who are active outdoors. Ozone can aggravate asthma, inflame the linings of the lungs and reduce a person's ability to breathe as easily and deeply as normal. Repeated exposure over time may permanently damage lung tissue. Studies also show an association between ozone exposure and mortality.

Exposure to fine particles, those smaller than 2.5 microns, is associated with an even wider range of health effects, including aggravated asthma and chronic bronchitis, irregular heartbeat, nonfatal heart attack and premature death in people with heart or lung disease.

The prevalence and seriousness of these health effects led EPA to revise the standards for both ozone and fine particles in 1997. While litigation slowed implementation, we are now moving forward to bring cleaner air to nonattainment areas across the country. As this chart shows, deadlines for reducing ozone pollution range from 2007 to 2021, depending on the severity of the area's problem. The dates for meeting fine particle standards range from 2010 to 2015.

It is a tight schedule, and we are aware that certain areas are concerned about meeting the standards on time, as Senator DeMint and others have pointed out today. Let me assure you that EPA is committed to assisting States and nonattainment areas as they develop their implementation plans, and helping them to identify reasonable controls for reducing emissions.

I will also note there is a process for both standards by which areas can seek additional time or request a later attainment date.

We know from experience that bringing areas into attainment requires a combination of Federal and State programs and in some cases local measures as well. After the 1990 Clean Air Act amendments, EPA designated 101 areas as nonattainment for the old ozone standards, the 1-hour standards. Today, nearly 80 percent of those areas meet the standards, an accomplishment made possible by ingenuity and hard work by State and local governments, industry and citizens and support from EPA in the form of regulations that have reduced ozone regionally and across the Nation.

We envision new successes with the 8-hour ozone and fine particulate standards. Just 5 years from now, an estimated 82 percent of the current nonattainment areas for the 8-hour ozone standard will attain the standards, thanks to a suite of EPA regulations to reduce emissions from cars, buses, trucks, construction equipment, fuels and powerplants.

Our modeling also shows that 18 of the 39 current $PM\text{–}_{2.5}$ nonattainment areas will meet standards by 2010, thanks to many of these same programs, including CAIR, EPA's market-based Clean Air Interstate Rule. CAIR will build on the approaches used in our highly successful acid rain program to dramatically reduce powerplant pollution.

I will note, as Senator Inhofe and Senator Voinovich have both noted, the Administration, and I will speak for the Administration, continues to prefer to reduce emissions from powerplants through multi-pollutant legislation such as Clear Skies, which would be permanent and would apply nationwide. In addition to regulatory and legislative approaches, our strong voluntary programs will help States as they implement the ozone and fine particle standards.

We have seen some shining examples of these programs as part of our national Clean Diesel Campaign, which is reducing pollution through voluntary efforts such as idling reduction and diesel retrofits. Mr. Chairman, I would like to thank you for the leadership you have shown through the Diesel Emissions Reduction Act of 2005.

While all these programs, regulatory and voluntary, will help nonattainment areas make significant progress toward meeting the standards, some States and communities will have to take additional local measures. EPA has been working closely with States to help them identify actions that will help. My written testimony outlines the scope of our efforts to assist States by providing technical information, analytical tools, training and guidance. For example, we have been supporting States that are developing nontraditional approaches to reducing emissions that contribute to ozone and PM.

Within the past 2 years, we have issued guidance to help States take credit for measures such as energy efficiency, truck and locomotive idling reduction, airport emissions reductions and commuter programs. We are also working with State officials to develop a menu of options to reduce fine particle pollution.

Experience has taught us that reducing pollution is challenging, no doubt about that. Meeting fine particle and 8-hour ozone standards will be no different. We have also learned that we have a much better chance of success if we work as partners across all levels of government. EPA remains committed to this important partnership and to improving the quality of our Nation's air.

Thank you very much. It is truly an honor and a privilege to be here today. I would be happy to answer any questions you might have.

Senator VOINOVICH. Thank you very much, Mr. Wehrum.

I would like to remind the committee members that we are going to have a round of 5-minute questioning. I would like to begin, Mr. Wehrum.

You state that EPA has moved forward with a host of regulations to present regional solutions to help counties come into attainment. However, this is not enough for some areas. Ohio EPA, and I have made reference to Mr. Koncelik, states in his testimony, and you have already heard it, about the fact that we could shut down all the industries and have the people move out, and we wouldn't achieve the 2010 requirements.

Throughout my career, I have found that it does a tremendous amount of good to get everyone together, get on the same page and develop solutions. Working with Senator Carper and other members of this committee, we were able to sit down with an extremely diverse group that never all agree on anything to develop the Diesel Emissions Reduction Act that you mentioned in your testimony. It can be done.

Would you be willing to work with me, Ohio EPA and other stakeholders like the Northeast Ohio Area Coordinating Agency and the Ohio Environmental Council that represents our environmental groups to determine how and when compliance for air quality standards can be achieved in Cleveland?

Mr. WEHRUM. Absolutely yes, Senator. As I noted in my comments and from my personal experience, it often takes the efforts, the input, the energy, and the ingenuity of many stakeholders to find and implement the solutions to tough air pollution problems like those faced by the city of Cleveland. I can assure you that U.S. EPA will participate in this effort, will bring the assistance that we are able to bring and seek the (solutions and hopefully implement those solutions) that will allow Cleveland to attain by its specified deadline.

Senator VOINOVICH. Thank you.

You are familiar, and you mentioned it, the legislation that we passed in terms of retrofitting diesel engines. As you know, one of the provisions consolidates all of the various programs that deal with reducing diesel emissions into kind of one basket. There is a lot of concern out there about, is that going to happen. Does the Agency plan to consolidate all diesel emissions reduction programs under this one, under DERA?

Mr. WEHRUM. Senator, I can tell you we fully support the legislation. We will take the steps necessary to satisfy the obligations of the legislation.

With regard to levels of funding, which I think is part of your question, we think these diesel reduction programs are enormously important and can bring great air quality benefits. Certainly a priority for the Agency, and we will certainly make it a priority in our budgeting process.

Senator VOINOVICH. Has anybody ever calculated if that was fully funded what impact it would have in terms of reducing emissions?

Mr. WEHRUM. Not to my knowledge, Senator, but no doubt the benefits would be substantial.

Senator VOINOVICH. The last thing I would like to get at is, when we had Administrator Leavitt here in April 2004, he talked about the State implementation plans would be due in February 2008, fine particle that is. EPA intends to propose a rule, that's June, that would describe the minimum elements required for fine particle SIPs, State Implementation Plans, and intends to finalize this rule later this year or early in 2005.

As you know, EPA only proposed this rule earlier this month. I am not going to ask you to explain why it has taken so long. The question is, when are we going to get this finished up so that States know exactly what it is that they are going to have to do in order to comply?

Mr. WEHRUM. Senator, as you point out, we just recently proposed that regulation. I believe we are on track to promulgate the final implementation rule likely by mid-2006. The deadline for submitting $PM_{2.5}$ implementation plans will be April 2008. So if we stay on the schedule I just described, that will provide well over a year for States to understand the parameters of the rule and be able to build that into their planning efforts.

Senator VOINOVICH. Well, I would respectfully suggest that had we done it earlier, it would have been a lot easier for the States. Senator DeMint is talking about not knowing which end is up trying to comply with it. I think the sooner we know what the rules are, the better off we will all be.

I mentioned I want to sit down with you and others to figure out how we are going to deal with northeastern Ohio. We have to know what the rules are. So what you are telling me today is that you will finalize the particulate matter implementation rule when?

Mr. WEHRUM. I believe we will be able to get the rule done by the middle of next year. It is possible it may take a little bit longer than that. But what I can tell you is, this rule is a priority for me and it is a priority for the Agency. We will move it along as expeditiously as we can, Senator.

Senator VOINOVICH. OK. The SIP for that is due when?

Mr. WEHRUM. April 2008. I will point out, Senator, these implementation rules are important, and I don't intend to minimize the importance. They will provide valuable information and guidance for States that will be useful and needed for the preparation of approval of SIPs.

I would like to make the point that much of what must be done to prepare an approvable SIP is already understood and already known. The State commissioners and those responsible for air programs have a vast amount of experience, because we have been implementing SIP-based programs for many, many years under the Clean Air Act.

So again, I am not going to minimize the importance of these implementation rules. There is work being done and there is much work that can be done. When I look at the picture, I have confidence that the schedules we are talking about for doing the implementation rules will in fact provide reasonable periods of time for these rules to be rolled into the SIP planning efforts.

Senator VOINOVICH. What I am going to do is ask Mr. Koncelik what impact it is having on his decisionmaking, because the rule will be delayed until next year, after June some time. So what you are saying is that probably they have enough information that they can go ahead and put a plan in place. So I am going to be interested to hear from them as to whether or not, or perhaps one of our witnesses in the second panel can help us with that.

Senator Carper.

Senator CARPER. Thanks, Mr. Chairman.

Mr. Wehrum, good to see you. Thank you for being here and for your work that you and your colleagues at EPA are doing.

I have a real quick question, and I will ask you to answer it briefly. There is a standard that has been, I think, promulgated for ultra low-sulfur diesel fuel. My recollection is that a standard kicks in, is it in October of next year?

Mr. WEHRUM. That is correct, Senator.

Senator CARPER. Some of us worked pretty hard to get included in the Energy bill a variable tax credit that incentivizes the production and the purchase of low-emission, high fuel efficient diesel-powered cars, trucks and vans. That variable tax credit kicks in on January 1 of this coming year. I think it is a tax credit that is worth up to about $3,400.

If you look to Europe, you see the introduction of a lot of vehicles, almost half the vehicles that will be purchased in Europe, cars, trucks and vans, are diesel-powered. They have very low sulfur diesel fuel. They like diesel-powered vehicles, low-emission diesel-powered vehicles because of the good fuel economy, lower CO_2 emissions and performance as well.

I understand that the standard for ultra low-sulfur diesel fuel is being delayed by maybe 45 days. Is that here in this country next year?

Mr. WEHRUM. Senator, the standard that you are referring to is part of a suite of standards directed at reducing emissions from what we call the "on-road" diesel vehicles, things like tractor-trailer rigs that travel on the highway. That standard is a combination of fuel requirements and engine technology and control requirements. As you point out, they are all slated to come into effect late next year.

Right now, the regulation requires, on the fuel side, a sequence of deadlines that begins with the refineries and then moves to the distributors and then finally moves to the retail outlets that will actually sell this fuel to the truckers and the like. Just yesterday or the day before, the Administrator signed a direct final rule and of course a final proposal to extend the second and the third of the deadlines that I just described.

So we are still holding refiners to the original deadline of June of next year to begin producing the low-sulfur fuel. But those in the distribution chain, up through the retail level, had concern that once that low-sulfur fuel began to be distributed through the system that it would take longer to flush out the higher sulfur fuel that is currently in use—longer than we had originally anticipated when we promulgated the regulations.

So we are taking action to extend the deadlines for the distributors and the deadlines for the retail sales. But at the end of the day, that is not going to delay implementation of the rule. Again, this will be a combination of fuel with the vehicle technology and this technology will begin to be introduced at the end of next year and the fuel will be there when the vehicles are introduced.

Senator CARPER. Good. I just hope that this one delay, I think it is fairly brief, is it 45 days?

Mr. WEHRUM. That is correct.

Senator CARPER. I hope that is all we need and that we can go forward. We are leaning on the folks who make cars, trucks and vans to make low-emission diesel fuel powered vehicles highly energy efficient, and I just want to make sure that there is fuel out there for people who buy those vehicles to use them in their cars, trucks and vans.

You were kind to comment on the work that Senator Voinovich and others of us have done on the diesel retrofit legislation. It has been a pleasure to work with him and others on that. We also want to thank EPA for working with us in this area. There is an old saying, it all comes down to money. In the end, we have to come up with the appropriations. It is all well and good that we have authorized this. I think most people think it is a terrific program. But now we have to make sure it is funded so it can go forward.

In 2002, all of the litigation holding up the new National Ambient Air Quality Standards was completed, and EPA was free to move forward with the implementation of those standards, as you know. It is my understanding, I might be wrong, but it is my understanding that once a national standard is set, that EPA and the States take a series of steps to achieve those standards. Those areas are being designated and classified in attainment or nonattainment. EPA issues rules for implementation that include minimum elements for State implementation plans.

Using this guidance, States like Delaware develop and submit for approval our SIPs through EPA that show how we will reach attainment by the promulgated deadlines. However, in my view, EPA has been very slow in developing this guidance. I realize there are extenuating circumstances.

But yesterday, a full 3 years after the litigation was I believe settled, EPA finalized its rules to provide States with guidance needed to meet the ozone air quality standards. They have yet to finalize their guidance for States to meet particulate matter, I believe.

Could you just explain to us why it has taken so long to develop these standards, and when we can expect to see the guidance for particulate matter?

Mr. WEHRUM. Senator, the implementation rules are a part of a suite of many other determinations and regulations that are necessary to implement the ambient air quality standards. In the case of ozone, we divided our implementation rules into two pieces and promulgated the first part of the implementation rule that had the most basic information, but the most important information at the time that we did the designations. We knew that was important. We made it the highest priority and we got it done.

The second part of the ozone implementation rule, as has been pointed out, was proposed along with the first part. We just finalized within the last couple of days.

In the case of PM, the proposed implementation rule was signed in September, just a month or a couple of months ago. In response to the question the Chairman asked, it is our belief that we will finalize that regulation by the middle of next year or perhaps somewhat later. As I have indicated, we realize this rule is a priority and we will move expeditiously in completing it.

All I will say, and I will emphasize again, these rules are important. We will get them done as expeditiously as we can. But we at EPA have not been sitting on our hands, and those in the States have not been sitting on their hands. There is much work that can be done, and is being done, to prepare for the SIPs.

Part of why we, for example, did not finalize the ozone implementation rule until the last couple of days is because we placed a priority and much emphasis on completing the Clean Air Interstate Rule. That is enormously important to us and I believe enormously important to the members of the committee, because it in a single stroke provided millions of tons of reductions of SO_2 and NOx from powerplants that are affecting nonattainment areas throughout the eastern parts of the country. That regulation alone, in conjunction with other Federal regulations that are on the books are by themselves going to solve the nonattainment issues that many areas face.

In addition, while the implementation rules are important, there is a wide range of other guidance that we develop and other tools that we develop and make available. In my written testimony, in the appendices, it includes three lists that give you some indication of the other activities that we have undertaken over this period of time.

So again, from an overall standpoint, my belief is we are making much progress. There is much work that can be done and is being done. The implementation rules either have been or will be completed within a period of time that will reasonably make them available for use in formulating the final SIPs submissions.

Senator CARPER. Thank you very much.

Senator VOINOVICH. Senator DeMint.

Senator DEMINT. It is a little frightening that a rule is so complex, that it takes that long to do, that we are going to ask our cities and States to comply with it. It is frightening to me.

I would just like to ask a question, and again I appreciate your being here, I don't intend any disrespect. But as you know, there are many uncontrollable variables as it relates to air pollution. Many things related to geography, coastal areas will have a different set of circumstances than a foothills area like mine that might have weather inversions. An area like mine where two major interstate highways criss-cross, where the measuring devices are in close proximity to heavy traffic between Charlotte and Atlanta.

We have no control of the weather, the geography, the Federal highways, other things that affect pollution. We are having difficulty getting data so that we can respond, we can take the measures necessary to continue to clean our air.

My question to you is, how do you feel that it is right to even be talking about increasing the standards when you still have cities like my home town of Greenville that don't have enough data now to deal with the designation that we already have, enough data to determine what measures we need to take to improve the air, and you are already moving to increase a standard that you have not yet told us how to meet the other one?

Mr. WEHRUM. Senator, that is an excellent question. I will digress a moment and just say that I appreciate the input and the view that you bring and the other members of the committee bring. It is important to the Agency to hear concerns such as the ones you are expressing, so that we understand the perspective that you have and can integrate that perspective into the steps we take to help people meet the standards that are on the books right now. So I thank you for that.

With regard to review of the current standards, this is a situation where the Clean Air Act is quite specific. It requires EPA to consider or reconsider all existing standards on a 5-year schedule, rotating schedule. So under the requirements of the Clean Air Act, we had an obligation to review the 8-hour ozone standard and $PM_{2.5}$ standard by 2003, because those standards were enacted in 1997.

We failed to meet that deadline and as a result of that failure, we were sued. As a result of that lawsuit, we now have revised, legally enforceable deadlines for completing the review of the standards. Most importantly for us, in the case of the fine particle standard, it calls for us to propose some action by December 20 of this year and to take a final action by September of next year.

Senator DEMINT. Does that review include at all your ability to deliver constructive data to the areas that you want to respond to it? Review is not just your ability to enforce. But does that review include considerations as I mentioned?

Mr. WEHRUM. In short, no, Senator. The 1997 standards were litigated up to the Supreme Court. The Supreme Court made it quite clear that our consideration of the standards and the possible need to adjust them needs to be based on assessment of potential impact on human health and the environment.

Senator DEMINT. So it has nothing to do with your ability to do your part of the job. It only relates to municipalities who are supposed to meet a standard that you haven't told them how to meet yet.

Mr. WEHRUM. I will just say, Senator, that when we are reviewing standards, we are obligated to focus on the human health impacts and possible environmental impacts.

Senator DEMINT. Thank you, Mr. Chairman.

Senator VOINOVICH. Thank you. Senator Isakson?

Senator ISAKSON. Thank you very much for being here.

You said in your statement that 80 percent of the communities that will be, that are nonattainment will have met attainment by 2015. Was I hearing that right?

Mr. WEHRUM. Yes, Senator.

Senator ISAKSON. How do you know that 20 percent won't?

Mr. WEHRUM. We don't know that they won't, but the statements in my testimony were based on work that was done in conjunction with the Clean Air Interstate Rule that I have talked about a couple of times during my testimony. Just looking at that regulation and other existing Federal and State programs that are just on the books right now, we see tremendous improvement over the next few years because of the reductions that will be achieved.

That doesn't mean we have made a determination that the other areas will not meet the standard. What it does mean is additional steps are going to have to be taken, probably locally in those areas, to get them over the line and into clean air.

Senator ISAKSON. Does it also probably mean that 20 percent of the communities that are in nonattainment can't get out of nonattainment because of circumstances beyond their control?

Mr. WEHRUM. No, Senator.

Senator ISAKSON. Are you familiar with the Walker and Catusa County, GA case?

Mr. WEHRUM. Yes, Senator.

Senator ISAKSON. For the benefit of the committee, and I think somewhat similar to Senator DeMint's question, Walker and Catusa are rural, northwest Georgia mountain communities. They were placed on nonattainment. The source of a great deal of the pollutant has been traced back to forest fires in Alaska. They also have a major interstate going through.

They entered into a compact, a voluntary compact with EPA, but still were placed in nonattainment. The reason I ask the question is, just like some of the things that Senator DeMint said, there are certainly some places, there are two counties in Georgia that there is nothing they can do currently to get out from under nonattainment. They can't do anything to get out because of circumstances beyond their control.

How many other places would there be like that in the country, would you think?

Mr. WEHRUM. I don't know the answer to that particular question. But with regard to the two counties that you have identified and are concerned with, I would like to elaborate.

Senator ISAKSON. Please.

Mr. WEHRUM. The concern about the air quality in those areas as raised by local officials in those areas is that fires in upwind areas and in some cases areas that are fairly distant upwind were having such an impact on the air quality that it caused those areas to be in nonattainment where they otherwise wouldn't as a result of local and other regional emissions.

We have had a policy for some time at the Agency, an exceptional events policy, we call it, that allows for an assessment in situations like this as to whether the impacts in fact are occurring such that those types of events are causing nonattainment. Where the data indicate that that is the case, we can set aside those data and they are not used for making attainment or nonattainment determinations.

What I can tell you about your particular situation is, or the situation in those counties, is that the data has been offered to the Agency. The data is under consideration. We had initially, as you point out, made a designation of nonattainment. But the area has sought reconsideration of that determination and we will work hard to consider the information that is brought forward and make the best decision we can based on the data that are available.

Senator ISAKSON. I appreciate that. I am aware of the appeal, and I know that you are reevaluating it. I went up there in August. It is about an hour and a half from my home. I went up there to see it. If you ride into those communities and you look at the density of population and you look at the type of employment, which is not industrial based or major pollutant contributing based, and then you look at its proximity to another State's metropolitan area and the data they submitted with regard to the forest fires, it raised the question to me that that's not the only place in the United States that a small, rural community could end up falling under a designation that it then could not get out from under through any efforts of its own volition.

So I appreciate that review, and I would appreciate your answer really quickly.

I have another question. EPA is requiring Atlanta to start using a federally reformulated gasoline. My understanding is the current gasoline sold in Atlanta is a low-sulfur gasoline and the designated gasoline—I think there is a lawsuit over this issue. The designated gasoline that now they are going to be required to sell actually is a larger polluter than what they are doing now.

How do we have results that are designated to improve air quality that the mandated gas to be sold actually is a worse pollutant than what currently is being sold? Or am I wrong? And I could be wrong.

Mr. WEHRUM. Well, the situation in Atlanta, you are absolutely correct that that area has its own local fuel standards that were adopted to improve air quality and approved by EPA. The additional fuel requirement, what we call a reformulated gasoline, is a result of the designation that they received under the prior 1-hour standard. So there were graduated levels of nonattainment and when Atlanta reached a certain level, the law required that reformulated gasoline be applied in that area.

The city and the State asked EPA to waive certain aspects, we have the ability to waive the oxygenate piece of that. There was controversy, and it led to litigation. Our determination was stayed by the Fifth Circuit and that is pretty much where the situation stands.

What I can tell you is this is an issue we have been following very closely and trying to work closely with the officials in the area. We haven't reached final resolution, but I am hoping that in the very near future that we can get there.

Senator ISAKSON. I know I am running over, but I want to thank you for your forthright answers to both of those questions, and just point out, Mr. Chairman, the importance of this hearing and the importance in us. Because if I heard everything right, in a very respectful way, to a certain extent you are saying your hands are tied by the law itself.

I am putting words in your mouth, so I will take the criticism. Did I hear that wrong?

Mr. WEHRUM. No, Senator, the law is quite specific about the obligations that are applied at various points in time. We are attempting to maneuver through the various requirements in a way that gets what everybody views as a sensible result.

Senator ISAKSON. Thank you very much for your service.

Senator VOINOVICH. Thank you.

Mr. Wehrum, we really appreciate your being here today and we look forward to working with you and having those regulations finalized. Thank you very much.

Mr. WEHRUM. Thank you, Mr. Chairman. Thank you, Senator Carper and Senator Isakson.

Senator VOINOVICH. Our second panel, we have Sam Olens, who is chairman of the Atlanta Regional Commission. We are very happy to have you here with us. Jim Werner, who is the director of Delaware's Division of Air and Waste Management, good friend of Senator Carper's and Stephen Moret, who is the president and CEO of the Baton Rouge Area Chamber of Commerce.

Senator ISAKSON. Mr. Chairman, can I say a word about Mr. Olens before he testifies?

Senator VOINOVICH. You sure can.

Senator ISAKSON. I want to acknowledge Mr. Olens in my remarks. Sam is a dear friend of mine and has a great resume, he is a great public servant. Just recently, he did quite an outstanding thing. He passed a one cent local option 5-year sales tax to raise $1 billion for transportation improvements in the community that I live in, which is the third largest county in the State of Georgia.

A lot of his leadership in the deployment of those funds are aimed at traffic mitigation and those things that we can do in a positive way in construction that themselves contribute to the lessening of pollutants. So we are fortunate to have someone here who not only knows the words but he knows what they mean and he is doing it on a daily basis. He is a great public servant in Georgia and I welcome him here today.

Senator VOINOVICH. Thank you all for being here.

Before your testimony, I want to ask unanimous consent that the letters from major State and local groups and over 200 environmental, industry, public and labor groups asking that the fiscal year 2007 budget include $200 million for the Diesel Emissions Reductions Act and that all other diesel emissions reduction programs be funded under the DERA bill be included in the record.

[The referenced information follows:]

National Governors' Association
National Conference of State Legislatures
National Association of Counties
National League of Cities

The Honorable George W. Bush, President
United States of America
The White House
1600 Pennsylvania Avenue, N.W.
Washington, D.C. 20500

Dear Mr. President:

On behalf of state and local governments, we write to express our support for the Diesel Emissions Reduction Act of 2005 (DERA) which was recently enacted as part of the Energy Policy Act of 2005. While recognizing the need to balance a variety of budget priorities, we urge you to fully fund this program at $200 million in your fiscal year 2007 budget without affecting funding support for other key environmental programs. While we understand there are competing pressures for funding, we do not want to see offsetting reductions in other vital environmental programs to meet this goal.

DERA will give state and local governments a valuable tool in our continuing efforts to meet critical air quality standards. DERA will compliment ongoing private and public sector efforts to curb diesel emissions and build on the success of the administration's clean diesel initiatives. It will help to mitigate respiratory problems with which our children and others have been afflicted.

By offering grants and loans to various entities, the program leverages state and local government and private sector resources to help us collectively and cooperatively improve air quality. It provides an opportunity to coordinate implementation of other related programs such as the Clean School Bus USA and Diesel Truck Retrofit and Fleet Modernization programs with DERA. It builds on proven state and local government and private sector programs that use technology to retrofit or replace older diesel engines. And, it establishes an intergovernmental partnership that will provide an effective way for cleaning our air and protecting public health.

We seek your support for full FY2007 funding for DERA and appreciate your consideration of our united position on this program.

Sincerely,

Ray Scheppach
Executive Director
National Governors Association

William T. Pound
Executive Director
National Conference of State Legislatures

Larry Naake
Executive Director
National Association of Counties

Donald J. Borut
Executive Director
National League of Cities

Diesel Emission Reduction Program Supporters

November 2, 2005

The Honorable George W. Bush
The White House
1600 Pennsylvania Avenue, NW
Washington, DC 20500

Dear Mr. President:

As a uniquely broad coalition, we request that you include $200 million for the Diesel Emission Reduction Program in your fiscal year 2007 (FY2007) budget. This program builds on the success of your clean diesel initiatives.

Diesel powered vehicles and equipment play an important part in the nation's economy and are getting cleaner every day. Under your leadership, the Environmental Protection Agency has adopted diesel fuel and new engine regulations that will provide dramatic reductions in emissions.

However, the 11 million diesel powered vehicles and equipment already in use are not affected by these standards. This population of existing engines has a long life and will remain in service for decades. The Diesel Emission Reduction Program, as authorized by the Energy Policy Act of 2005, is designed to provide significant emissions reductions from these existing engines. The Energy Policy Act authorized several important diesel initiatives, and we support all of these. We are requesting that you provide funding for this Program with the clear direction that the intent of the Clean School Bus USA Program, Diesel Truck Retrofit and Fleet Modernization Program, and Engine Idling Reduction Program as authorized will be carried out within it.

This investment is needed and is fiscally responsible, yielding one of the greatest benefits to cost ratios of any federal program according to the Office of Management and Budget's own calculations. It will go a long way toward helping states and localities meet the nation's new clean air standards. It also employs the most cost-effective emissions reduction strategies. Furthermore, similar to existing federal and state programs, the federal contribution will likely be dwarfed by the funding leveraged from other sources.

States, localities, environmental, health, user, and industry groups all support full funding of the Diesel Emission Reduction Program as the unifying vehicle to address this opportunity. Full funding of this Program is sound environmental, economic, and budgetary policy.

Thank you for your attention to this matter.

Sincerely,

Alabama State Port Authority
Albany Port District Commission
American Association of Port Authorities (AAPA)
American Bottom Conservancy
American Lung Association
American Lung Association of Metropolitan Chicago
American Lung Association of New York State, Inc.
American Lung Association of Washington
American Road and Transportation Builders Association
American Trucking Associations
Anderson Clayton Corporation
Arthur F. Mulligan Inc
Associated Equipment Distributors
Associated General Contractors of America (AGC)
Association of American Railroads
Association of Equipment Manufacturers
Association of Local Air Pollution Control Officials (ALAPCO)
Bay Area Air Quality Management District
Beck Bus Transportation
Black Roack Systems LLC
Blue Water Network (Division of Friends of the Earth)
Broadview Cooperative Gin, Inc.
Buttonwillow Ginning Co.
California Cotton Ginner and Growers Association (CCGGA)
California School Transportation Association
Canadian Hydrogen Energy Company
Cantua Cooperative Gin, Inc.
Caterpillar Inc.
Central Ohio Clean Fuels Coalition
Central Valley Coop
Chappaqua Transportation
Chestnut Ridge Transportation, Inc.
Citizen Action - Illinois
Citizens for Pennsylvania's Future

Clean Air Action Corporation
Clean Air Task Force (CATF)
Clean Air Watch
Clean Diesel Technologies, Inc.
Clean Water Action
Clean Water Action - Connecticut
Clean Water Action - Pennsylvania
Clean Water Action - Rhode Island
Cleveland-Cuyahoga County Port Authority
Community Bus Services, Inc
Community Health Initiative
Commuter Challenge
Connecticut School Transportation Association
Construction Industry Air Quality Association
Corning Incorporated
County Line Gin, Inc.
Cross Creek II Gin, LLC
Cummins Inc.
Daimler-Chrysler
Deere and Company
Dell Transportation
Delphi Corporation
Detroit Diesel Corporation
Deutz Corporation
Diesel Technology Forum (DTF)
Donaldson Company
Dos Palos Cooperative Gin, Inc.
Dousman Transport Company, Inc.
Durham School Services LLC
Eagle Valley Ginning LLC
Earth Day Coalition's Clean Fuels Program
Eaton Corporation
Educational Bus Transportation, Inc.
Elbow Enterprises, Inc.
Emerson Park Development Corporation
Emissions Control Technology Association (ECTA)
Emisstar
Engelhard Corporation
Engine Manufacturers Association (EMA)
Environment Northeast
Environmental Defense
Extengine Transport Systems, LLC
Farmers Cooperative Gin, Inc.
Farmers Firebaugh Ginning Co.
Fleetguard Emissions Solutions

Galveston-Houston Association for Smog Prevention (GHASP)
Gershowitz Transporation, Inc.
Green Environmental Council
Greenpeace
Group Against Smog and Pollution
Health & Environmental Justice - St. Louis
Hendrickson Bus Corporation
Honeywell
Huntington Coach Corporation
Huron Ginning Company, Inc.
IdleAire Technologies Corporation
Illinois School Transportation Association
International Brotherhood of Teamsters
International Truck and Engine Corporation
Isuzu Manufacturing Services of America, Inc.
Izaak Walton League of America (Midwest Office)
Jaco Transportation, Inc.
Johnson Matthey
Kent Environmental Council
Kerman Coop Gin
Kern Delta-Weedpatch Cotton Ginning Co.
Kobussen Buses, Ltd
KyotoUSA
Lane Regional Air Pollution Authority
Laton Cooperative Gin Inc.
Lubrizol Engine Control Systems
Madera Cooperative Gin, Inc
Manson Construction Company
Manufacturers of Emission Controls Association (MECA)
Massachusetts Clean Water Action Alliance
Massachusetts Port Authority
Mid State Bus Service, Inc.
Mid-City Transit Corp.
Mid-Valley Cotton Growers, Inc.
Minnesota School Bus Operators Association
Minturn Cooperative Gin, Inc.
Modern Ginning Company
Myer Bus Line, Inc.
National Association for Pupil Transportation (NAPT)
National Association of State Directors of Pupil Transportation Services
National Mining Association
National School Transportation Association
Natural Resources Defense Council (NRDC)
Neighborhood House of North Richmond (CA)
New Jersey Environmental Federation

New York School Bus Contractors Association
NGK Automotive Ceramics USA, Inc.
NGVAmerica
North Carolina State Port Authority
North Valley Cotton Gin
Northeast States for Coordinated Air Use Management (NESCAUM)
Northwest Clean Air Agency
Oakland Maritime Support Services
Ohio Bus Association
Ohio Environmental Council
Ohio Equipment Distributors Association
Ohio Manufacturers Association
Oregon Department of Environmental Quality
Pacific Institute for Studies in Development, Environment, & Security
Pacific Pima Gin Company
Pacifica
Panoche Ginning Company
Passenger Vessel Association
Pennsylvania School Bus Association
Physicians for Social Responsibility
Planters Ginning Company
Port Freeport, TX
Port of Everett
Port of Galveston
Port of Houston Authority
Port of Long Beach
Port of Los Angeles
Port of Miami
Port of Oakland Pacific Merchant Shipping Association
Port of Portland (OR)
Port of Sacramento
Port of Seattle
Port of Tacoma
Port of Vancouver, USA
Port of Wilmington, Delaware
Puget Sound Clean Air Agency
Railpower Technologies Corporation
Robert Bosch Corporation
Sacramento Matropolitan Air Quality Management District
San Joaquin Valley Air Pollution Control District
San Luis Obispo County Air Pollution Control District
Santa Barbara County Air Pollution Control District
Semi-Tropic Cooperative Gin
Shafter-Wasco Ginning Co, Inc
Shurepower

Sierra Club Kaskaskia Group
South Coast Air Quality Management District
South Valley Gins, Inc.
Southern Alliance for Clean Energy
Southern Environmental Law Center
Southwest Clean Air Agency
SSA Marine
State and Territorial Air Pollution Program Administrators (STAPPA)
Stratford Growers, Inc.
Sunrise Transportation
Symbiotic Strategies, LLC
Tenneco Automotive
Texas Public Citizen
The Britz Gins
The J.G. Boswell Company
The National Association of Waterfront Employees (NAWE)
The Port Authority of New York & New Jersey
The TransGroup, LLC
Tri-City Growers, Inc.
Tule River Cooperative Gin, Inc.
Umicore Autocat USA Inc.
Union of Concerned Scientists
Unions for Jobs and the Environment
United States Chamber of Commerce
Veterans Trans. Co. Inc.
Virginia Port Authority
Visalia Cooperative Cotton Gin
Volkswagon
Volvo Powertrain North America
West Valley Cotton Growers, Inc.
Western Lake Erie Waterkeeper
Western States Petroleum Association
Westfield Ginning
Westhaven Cotton Co.
Westside Farmers Cooperative Gin, Inc.
Yakima Regional Clean Air Authority

Cc: Andrew H. Card, Jr., Chief of Staff to the President
Karl Rove, Assistant to the President, Deputy Chief of Staff and Senior Advisor
Joshua B. Bolten, Director, Office of Management and Budget
James L. Connaughton, Chairman, Council on Environmental Quality
Stephen L. Johnson, Administrator, Environmental Protection Agency

Senator CARPER. Mr. Chairman, before our witnesses speak, could I just say, we welcome you all. I am especially pleased that Jim Werner could be here. He was born in Delaware, grew up in Delaware, but he has gone on to work in environmental control areas in various areas, especially I think, in Missouri. He has worked in the U.S. Department of Energy, he has as a consultant advised the NGA.

So he really has a breadth of experience, and we are fortunate he came home to Delaware a year or two ago to take on the responsibility to head up our Air and Waste Division within the Department of Natural Resources. It is a real pleasure to welcome him today. Thank you for coming.

Mr. WERNER. Thank you, Senator.

Senator VOINOVICH. It is the local people that make the difference.

Mr. Olens.

STATEMENT OF SAM OLENS, CHAIRMAN, COBB COUNTY BOARD OF COMMISSIONERS, MARIETTA, GA

Mr. OLENS. Thank you. Good morning, Chairman Voinovich, Ranking Member Carper, members of the committee. I would like to begin my testimony by specifically recognizing my U.S. Senator, Senator Isakson. Senator Isakson has been my State House representative to the State legislature, my State Senator, my Congressman and now my Senator. There is no one in Georgia in public service that I admire more than Senator Isakson.

Thank you for allowing me to be here today. I am Sam Olens, chairman of the Atlanta Regional Commission, and I am pleased to be here with you this morning to testify on behalf of the ARC and share with the committee our experiences in implementing Federal particulate matter and ozone air quality standards. The ARC is the designated MPO for Atlanta and has primary responsibility under the Clean Air Act for ensuring transportation conformity.

Atlanta was first designated as a nonattainment area for the 1-hour ozone standard in 1990. Over the past 15 years, we have made significant progress in improving our regional air quality. This resulted in attainment of the 1-hour ozone standard in 2004, something that many people doubted could ever be achieved. This significant achievement occurred as a result of two things. No. 1, the concerted and collaborative effort in the region to implement effective, innovative pollution control measures, and No. 2, significantly improved relationships between the various agencies, businesses, industries and other stakeholder groups that have a role in ensuring clean air in our State and in our region.

Our success has occurred in spite of unprecedented growth, numerous legal challenges and implementation of new air quality standards and provisions that have greatly impacted our planning process. We still have a long way to go, however. Twenty of the counties in our region are now designated as nonattainment under the 8-hour ozone standard, with a portion of two other counties also designated nonattainment under the Federal $PM_{2.5}$ standard. We continue to deal with a number of significant issues related to air quality planning.

Of particular concern just mentioned seconds ago by Senator Isakson is the pending appeal in the 11th Circuit Court of Appeals concerning the Clean Air Act requirement to implement RFG for the 1-hour ozone standard. Technical analysis has shown that this fuel blend will actually contribute an extra 1 ton per day in the 13-county core area of VOCs and 11.5 tons a day of additional NOx if we are required to use this RFG. This is a classic example of a well-intended Federal standard being implemented uniformly without consideration or flexibility given to the State and local governments to meet their unique conditions.

The ARC, along with our State Air Quality Agency, EPD, requested legislative and Agency relief. We specifically requested a waiver of 2 years from this requirement. But that was not granted. Conflicts, such as the pending litigation, create uncertainty in the modeling process and inconsistency in the planning process and make it very difficult to develop an accurate emissions inventory.

Similarly, we are frustrated with the continued delay in the release of rules and guidance documents that direct implementation of the new standards. Much of the burden of implementing the new standards could be alleviated if rulemaking and guidance were provided in a timely manner. The efforts of MPOs and States who are trying to meet the statutory deadlines for conformity, attainment, etc., must be recognized.

These deadlines are fixed by law, yet dates to receive rules and guidance continually slip months, even years, past promised timeframes. This makes future compliance to implement the new standards all the more difficult, and needs to be addressed as we move forward.

Our success in Atlanta was achieved through a partnership with Federal, State and local authorities, businesses, industry and other stakeholders. It took years to implement, required difficult choices and shared sacrifices by all. We are just now seeing the benefits of the collective hard work. The new standards will require a change to our process, additional and significant resource expenditures, and additional complexity to an already complicated transportation planning process.

When implementing the new standards, it is important that the Federal Government work in the true spirit of a partnership and provide the very same flexibility to MPOs and States that our Federal partners themselves expect.

The most important lesson we learned in our 15-year struggle to reach attainment status is the ability to maintain flexibility and control in implementing pollution control measures. We must have the ability to implement innovative, proactive measures to improve air quality in our own unique region.

Chairman Voinovich, you have already shown great leadership in this area through introduction of the Diesel Emissions Reduction Act of 2005. This legislation is a perfect example of providing nonattainment areas the opportunity and flexibility they need to design programs to fit their own unique needs. This is exactly what we need more of in areas such as Atlanta and where our focus needs to be.

In conclusion, we accept and are actively preparing for the challenges and growth that our region will face in the years to come.

It is anticipated that we will have another 2.3 million people in our region over the next 25 years, which will bring us to a little over 6 million. We acknowledge that environmental standards play an important role in how we manage and cope with this growth.

To ensure that new standards are implemented efficiently, we must have support from Federal partners in providing us effective guidance and the means by which to meet clean air standards in a manner suitable to our unique region.

Mr. Chairman and members of the committee, we look forward to working with you and others as we collectively implement air quality standards that protect our citizens from poor air quality. Once again on behalf of the ARC, I thank you for this opportunity to present our views, and I am happy to answer questions you might have. Thank you.

Senator VOINOVICH. Thank you, Mr. Olens.

Mr. Werner.

STATEMENT OF JAMES WERNER, DIRECTOR, DIVISION OF AIR AND WASTE MANAGEMENT, DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mr. WERNER. Thank you, Mr. Chairman and Senator Carper. Thank you for the opportunity to appear before you today. I want to also introduce my colleague, Ali Mirzakhalili, who is our air quality manager for the State of Delaware, who has been through the wars on coming into compliance.

As you noted earlier, Senator, we remain in nonattainment for ozone, even though we have met the 1-hour standard, we now face the challenge of meeting the 8-hour standard.

Delaware's situation is essentially a downwind State. The Senator earlier referred to the situation where even if everybody depopulated and we shut down industry, they would still be in noncompliance. That is more or less our situation. So we can't do it alone. But we have an enormous opportunity to do things. And that would really be the theme, the bottom line that I would leave you with today, is first, allow States to do what States can do best, and don't ignore the health benefits by staying on with the deadlines.

Let me at the outset again add my thanks to the leadership of both Senator Voinovich and Senator Carper in their work on the Diesel Emissions Reduction Act. We add our support to the recommendation of the Administration to include within its fiscal year 2007 budget request the $200 million requested. We will be looking with keen interest that first week of February whether or not that request is included in the fiscal year 2007 budget.

I am going to talk today about first, health effects, the ozone standard, PM fine and then last the CAIR role. The first thing that we need to keep in mind or remind ourselves is really the health benefits. A lot has been mentioned about that already. In Delaware, we recently released a study in conjunction with our Division of Public Health on the asthma burden, noting that in Delaware, the number of cases of asthma is increasing, which adds a tremendous burden to individuals, families, communities and businesses.

We feel like we have been here before. I myself was involved a bit in the analysis on what was called the Unfinished Business Report in the 1980's, later with the Science Advisory Board, analyzed further at OIRA, the White House OMB Office did a similar review, identifying that clearly the criteria air pollutants control far outweighed the costs for that. This is not to say we can ignore the standard.

In fact, I would very much emphasize that we all have to do our part in streamlining permitting, looking for the most cost-effective measures to reduce the contaminants. We are doing exactly that. We just completed what we call the value stream mapping process, which is a business tool to streamline our permitting process. We are going to continue this effort to improve the bureaucratic efficiency by using an air forum process to continually hear from the regulated community specific mechanisms we can do to reduce costs, but not necessarily delay or compromise any of our air quality benefits.

So again, the health costs have been proven over and over again to be far exceeding the implementation costs.

Let me go quickly to ozone. The ozone issue is perhaps Delaware's biggest issue, again mainly from the upstream sources that cook in the air and end up on our doorstep. It is a little frustrating that the changing sciences has resulted in a changing goal line, but for many of us, we saw that coming in the 1970's and 1980's when the science showed us that it was chronic exposure to ozone, not the episodic 1-hour. So it is not as if this is a surprise that we deal with the 8-hour standard.

It was as early as 1996 that we knew the benefits far outweighed the costs. We were engaged vigorously in the Ozone Transport Commission efforts and would offer for consideration the OTC CAIR PLUS proposals that offer a variety of measures that we could implement. I am also pleased to announce today that just in the past few days, our Secretary, John Hughes, signed a start-action notice which puts into motion the gears for the so-called 3–PLUS 1P, it is a multi-pollutant bill that looks at both the NOx, SOx and mercury, but also recognizes our commitment on carbon dioxide controls as part of the regional greenhouse gas initiative in the northeastern States. It is not broadly all the greenhouse gases, it is just CO_2.

But again to reemphasize the theme for today, Delaware's solutions for Delaware's problems and issues. In particular, let me just highlight one, and we have a whole list in our written testimony, lightering. This is not an issue that comes up in Oklahoma or Missouri. But we have supertankers coming in off the Atlantic Ocean that have to remove part of their load, from a million gallon tanker to a 350,000 gallon barge to be able to come up the river into the variety of refineries. We have two refineries in Delaware, one of which is one of the few refineries that handles sour crude, with high levels of sulfur. The lightering is essential to prevent oil spills, lighten the load.

Without any controls, we are talking about 2,000 tons of VOCs. We have worked out, I think, a win-win solution where they are doing essentially the vapor recovery. I think it is a real good example of coming up with a local solution to a local problem that we need the flexibility to do.

The PM fine rule is the next big challenge we have. Again, the regulatory efforts are chasing the science. We know the SIP is going to be an extraordinary challenge for us, not made easier by the delay in the implementation rule. We are still optimistic that we will be able to move forward.

But certainly delays in the name of harmonization will be a tremendous problem for us. Again, we are in nonattainment for that already in our northern most populous county. I see the red light on, so let me go right to CAIR, which is of course the most recent effort. It is a good rule, very important for us particularly given our downwind State. But it is not enough. The coverage doesn't take care of the issue of the deadlines or perhaps not stringent enough.

But certainly it is clear that any legislation that would essentially duplicate the CAIR requirements really does not help Delaware in this situation. Even with CAIR, we don't make it to the deadline.

In conclusion, there are certain rules that we should render unto EPA, as somebody referred to Caesar earlier, and certain issues you should render unto States. Please don't hobble the States' ability to address the unique problems and be creative in doing that.

With that, I will be happy to answer any questions, and again, thank you for the opportunity to appear before you.

Senator VOINOVICH. Thank you very much.

Mr. Moret.

STATEMENT OF STEPHEN MORET, PRESIDENT AND CEO, BATON ROUGE AREA CHAMBER OF COMMERCE

Mr. MORET. Senator Voinovich, members of the committee, I am delighted to be here with you.

Senator Voinovich, I have a special affinity for your State of Ohio. Two years ago there I met a wonderful young lady who is now my wife, so it has a special place in my heart.

My organization, the Baton Rouge Area Chamber of Commerce, is made up of over 1,500 businesses throughout the Greater Baton Rouge area. They range from small Mom and Pop shops to large multi-national corporations like the Shaw Group. But certainly the vast majority are small business owners.

As the voice of the Baton Rouge area business community, we promote economic and community development for our area. If you were to sum it up, our single overriding goal is to make the Baton Rouge area a better place in which to work and live.

Fifteen years ago, after passage of the Clean Air Act amendments of 1990, we were designated as a nonattainment region for ozone, in fact, a serious nonattainment area. We have taken that very seriously for a number of reasons. Certainly the obvious ones are the legal and economic implications. But in addition to that, we want the Baton Rouge area to be a place that attracts talented professionals from around the country. So from a business perspective, the quality there is very important to us.

I think perhaps most importantly from a personal level, we live there. Our families live there, our children live there. I myself have a young son, so this is something that is very important to me personally.

Our community has worked very diligently over the last 15 years in concert with our State Department of Environmental Quality and the EPA to improve the air quality and particularly to focus on the ozone issue. We have enacted laws and regulations to limit emissions of ozone precursors, VOC and NOx.

We have installed a wide range of pollution control equipment, some of it mandated, some of it voluntary. We have implemented vehicle inspection programs, raised fees, performed transportation studies, performed a range of modeling analyses and spent hundreds of millions of dollars addressing this issue.

In short, we have done everything that the Clean Air Act and the EPA have either required and/or suggested.

I am pleased to say that the results have been nothing short of tremendous, significantly in excess of State and Federal requirements. Just to give you a couple of examples, industrial VOC emissions in the Baton Rouge area have declined by 66 percent since 1990. Emissions of NOx emissions have declined by half, by 53 percent. Although we haven't to this point actually come into compliance with the NAAQS, we have missed it only by one to two parts per billion, a very, very small number, and a number which we believe is generated to a large extent from air transport issues connected with the Houston metro area.

Unfortunately, members of the committee, at the same time that we have been making a great deal of progress, we have also had to address some overly prescriptive elements of the Clean Air Act that we think have made it actually more difficult for us to come into compliance while at the same time creating perhaps unnecessary economic sanctions against our area. I want to give you just a couple of examples.

First of all, reformulated gasoline, or RFG. A strict interpretation of the Clean Air Act would suggest that we would have to implement RFG in the Baton Rouge metro area as a result of the attainment designation that we were at that point. Yet we have found, and I don't think that the EPA opposed this assessment, that not only would the implementation of RFG create a great economic cost to our region, in fact, around $150 million a year, but it would actually make the air quality worse, not better. It would actually make the ozone problem worse.

The second example that I would share with you is that as we have made a transition from the 1-hour standard to the 8-hour standard which is considered more protective of human health, we have still had to fight an issue in which there are some groups that have suggested that should have to implement penalties associated with the 1-hour standard, even though we are now in only marginal nonattainment with the 8-hour standard.

Some of these penalties, broad-based penalty fees and permitting obstacles would really cripple our economy without having a direct impact on the root cause of the ozone problem. In fact, we have estimated the costs to be in the range of $300 to $500 million per year.

On these two issues alone, that has really forced us to put together a coalition of industry and community groups to essentially pursue legal actions to try to address these somewhat unworkable aspects of at least the implementation of the Clean Air Act. Even though we expect both of these issues will ultimately get resolved in a reasonable way, it has taken a lot of time and attention off of what we really want to focus on, which is improving the air quality in the Baton Rouge area.

In the wake of Hurricane Katrina, which has brought tens of thousands of new population to our area and challenges facing the Baton Rouge area, it has made it even more difficult. Of course, I believe, Senator Voinovich, as you mentioned earlier, the sky-high prices of natural gas have created a huge challenge for our regional economy, which is based very much on the petrochemical industry. It is really a bedrock of our regional economy.

This is our community. We care about our community, we care about the quality of the air. This is important to us well beyond any Federal requirement.

Nevertheless, we welcome the accountability. But we ask that you provide that accountability in a way that gives us the flexibility to do the right thing for air quality and the right thing for our community. Thank you.

Senator VOINOVICH. Thank you very much.

I think we can all agree that our Nation's air quality is improving. We have heard from EPA about the upcoming emission reductions under Federal programs such as CAIR, low-sulfur fuels and cleaner engines. Later on I would really like to hear from Mr. Werner about the fact that, in terms of CAIR helping and even the multi-pollution legislation in the Clear Skies, and why that wouldn't help you, if I heard correctly.

Our State and local witnesses confirm that these Federal programs are critical to improving local air quality. These Federal programs, however, achieve their full emissions reductions in 2015 as opposed to the EPA attainment deadline of 2010. Given the timing, I find interesting, and Senator Inhofe made reference to it, it was in the Daily Environmental Reporter, he said a study in the Philadelphia area concluded that meeting the current ozone deadline would cost the local economy 42,000 jobs versus a loss of only 1,000 if the deadline was harmonized with new Federal emissions programs. Moreover, the current deadline would result in a decline in gross regional product of $5.5 billion for Philadelphia area versus three-tenths of a billion for a harmonized deadline.

The difference in estimated State tax revenues also is striking: $273 million lost under the current deadline versus $6 million under the more harmonized deadline. I ask unanimous consent that the article be included in the record.

[The referenced material follows:]

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Page A-26

Regulation & Law

Environment
Industry Report Says Delaying Ozone Deadline Would Reduce Impact of Eight-Hour Standard

Delaying the deadline for the Philadelphia area to comply with the Environmental Protection Agency air quality standard for ozone would save the area's economy billions of dollars and preserve thousands of jobs, a study released Nov. 7 by the American Petroleum Institute said.

Moving the deadline back five years--from 2010 to 2015--to take advantage of EPA programs such as the Clean Air Interstate Rule and nationwide restrictions on diesel emissions would lower the cost of attainment in the Philadelphia area by about 97 percent, the study said.

The American Petroleum Institute petitioned EPA in 2004 to take steps to allow Philadelphia and five other cities to take advantage of these rules to achieve attainment, saying that if they could rely on other EPA programs, the cities would have to implement much fewer local pollution controls. One of the options proposed by API was delaying the attainment deadlines until 2013 at the earliest.

EPA announced in 2004 that part or all of 474 counties in 32 states fail to meet the new, more stringent eight-hour air quality standard for ground-level ozone. Philadelphia and several other cities were given moderate nonattainment designations with attainment deadlines of 2010 (69 Fed. Reg. 23,951).

Philadelphia is representative of other cities, and similar cost savings could be achieved by pushing back the attainment deadlines elsewhere, Kyle Isakower, API manager for environmental policy, told BNA.

API was not the only industry group to challenge the ozone rulemaking. The National Petrochemical and Refiners Association sued EPA in June 2004 seeking later attainment deadlines (*National Petrochemical & Refiners Association v. EPA,* D.C. Cir., No. 04-1216, 6/30/04).

Isakower said API did not participate in the refiners' lawsuit, although it later intervened in the case. The refiners did not join the API petition to EPA, but filed a separate petition, he added.

Annual Cost Set at $3.9 Billion

The API study, performed by NERA Economic Consulting, said that meeting the current attainment deadline of 2010 would cost the Philadelphia area economy $3.9 billion a year, due to the cost of locally imposed air pollution controls.

If attainment were delayed until 2015, the cost to Philadelphia declines to $100 million a year, the study said.

This is because air pollution blown in from other areas would decline due to EPA diesel emissions control programs, set for full implementation after 2010, and the Clean Air Interstate Rule, the study said.

According to EPA, the Clean Air Interstate Rule will cut emissions of nitrogen oxides and sulfur dioxide from power plants in 28 states, including Pennsylvania, by about half in 2015 using emissions trading. After 2020, the rule will cut these emissions by 60 percent and 73 percent, respectively.

The study said the 2010 attainment deadline will lead to a $3 billion reduction in economic output in the region in 2011, growing to as much as $8 billion in 2020. It will cost between 42,000 and 60,000 jobs in the region by 2020, the study said, and reduce disposable personal income by between $4.5 billion and $6 billion.

Moving the attainment deadline to 2015 would lower the cost to the local economy to about $100 million per year, the study said. The impact on regional economic output would be about $300 million annually and the loss of about 1,000 jobs. Disposable personal income would decline by about $100 million, according to API.

"We think this is a concern, the misalignment of deadlines," Isakower said. "That is why we had the study done."

Health Benefits Ignored, ALA Says

However, Janice Nolen, national policy director of the American Lung Association, said the study ignores the benefits of attaining the standard by 2010.

"It is very clear they did not consider the health- related and medical benefits and lives saved of keeping the deadline where it is," Nolen said. The benefits of reducing ozone pollution outweigh the costs, she said.

The study also points up the need to speed up the deadlines in the Clean Air Interstate Rule, Nolen said.

The eight-hour standard establishes a maximum ozone level of 0.08 part per million averaged over an eight-hour period. The old standard, which will be enforced by EPA until June 15, 2005, is 0.12 ppm averaged over a one-hour period.

Release of the study comes three days before a hearing by the of the Senate Environment and Public Works Clean Air Subcommittee on state progress and concerns in implementing the ozone standard, and another standard for fine particles.

Marcie Ridgway, spokesman for Subcommittee Chairman George Voinovich (R-Ohio), said the hearing will focus on helping states to implement the standards. The subcommittee will not be ready to propose any action until after it evaluates testimony, Ridgway said.

By Steven D. Cook.

Senator VOINOVICH. Mr. Moret, it seems that harmonizing ozone attainment deadlines with these Federal emission reduction programs would significantly lessen the compliance burden for Philadelphia. Would that be your conclusion with your experience in Baton Rouge?

Mr. MORET. Senator Voinovich, that would be our conclusion. I am not intimately familiar with that study, but certainly that general sentiment is one that resonates very much in the Baton Rouge area. When we look at the planned actions of our industrial community, of DEQ and of some of the things that were referred to earlier that are coming down from the EPA, we think they will have a very significant impact on our ability to make it this last little mile to come into compliance with the NAAQS for ozone. So that is consistent with our experience.

Senator VOINOVICH. One of the things that has come out in the testimony is the evaluation of the health benefits versus the cost of reaching them. I think, Mr. Werner, you made reference to the fact that you have been able to really capture those costs. I sure would be interested in getting a copy of how you went about capturing those costs.

What I heard from you was that the costs, the cost savings from moving forward with these standards would be health cost benefits that would far outweigh the cost of going forward with the improvement in reducing our emissions. Did I hear that right?

Mr. WERNER. What I referred to is not specifically an analysis that I personally or the State was able to do, but rather to really decades of studies performed by a variety of people, including EPA, the National Academy of Sciences, the White House Office of Management and Budget, Office of Information and Regulatory Affairs that tried to valuate the reduced health burden from air pollution controls.

In science, when you see reproducibility results, it adds more confidence to the results. That is really what we have seen, is a variety of methodologies, a variety of studies by a variety of people all coming up with the same conclusion. The criteria air pollutant control clearly has benefits that far outweigh the costs in virtually every study that has been conducted.

Senator VOINOVICH. Have you done a study of your own in regard to this?

Mr. WERNER. No, these are very large, multi-million dollar, multi-year studies that no, I personally didn't do. I served in a consulting firm where we had several hundred people working at it. I was just one analyst of many contributing to that effort.

Senator VOINOVICH. But you based it on these national studies made by respected organizations and then kind of extrapolated it to your area, is that basically it?

Mr. WERNER. I am not saying specifically Delaware. I was referring to all those other studies that I just mentioned.

Senator VOINOVICH. I am just talking about Delaware.

Mr. WERNER. I don't have any specific data about Delaware.

Senator VOINOVICH. But your conclusion is that the cost of, the health benefit costs would far outweigh, a reduction in health benefit costs would far outweigh any kind of compliance costs?

Mr. WERNER. In Delaware, that's a relatively easy one, given that many of the costs would be imposed on upwind sources, and the benefit would be accrued to our own citizens. So that makes it an even easier analysis.

I might add with the NERA study, if I could, sir, that we haven't had a chance to fully evaluate it. But that is a study that of course has not been published in a peer-reviewed scientific journal, undergoing the same sort of vigorous peer review you normally see. It does consider just the costs. But it completely lacks any consideration for the benefits.

It also avoids the simple point that is really a matter for lawyers and the legislation, that there is really an opportunity to get an extension if the State of Pennsylvania wanted to. That might be something worthwhile, looking into the State of Pennsylvania's plans for finding the most cost-effective mechanisms.

Senator VOINOVICH. But you are not going to be able to comply by 2010?

Mr. WERNER. Right now, the modeling shows that we will not. We are going to make every effort. I guess the point is, whatever happens between now and 2010, it is certainly on the glide path, it is on the same path for getting to later compliance for whatever the rules and implementation are.

Senator VOINOVICH. Have you evaluated what impact not being in compliance will have on, or the expectation that you won't reach it in 2010 will have on your economic vitality in terms of the businesses?

Mr. WERNER. No, we haven't. I would hate to speculate. Certainly that is a consideration.

Senator VOINOVICH. I'm sorry?

Mr. WERNER. I said, no, we have not. Certainly that is a consideration, but it is a hypothetical right now.

Senator VOINOVICH. Senator Carper.

Senator CARPER. Thanks, Mr. Chairman. I want to start, if I could, with Jim Werner. You have mentioned this, I think a couple of us have mentioned this as well, but I just want to return to it again. In your testimony, you describe many of the actions that our State has taken to reduce our air pollution. You have mentioned again just in your last exchange with Governor Voinovich that even with these actions, it is still tough for us to be in attainment if the upwind States continue to postpone their deadlines or are allowed to postpone their deadlines.

Did you want to add anything further on that?

Mr. WERNER. There is an enormous concern about the potential that upwind States could delay their deadline. We think that's just essentially kicking the can down the road. All of our efforts, and I list a whole range of efforts from architectural and industrial maintenance, coatings, painting, a whole range of efforts, and we are working hard to find the most creative and cost-effective solutions. Despite all that effort, if upwind States didn't do their part, we simply cannot meet the attainment deadlines. Extending the deadlines would just make it harder.

Senator CARPER. In the context of national pollution programs, when I say national pollution programs I am thinking of some what we contemplate here before this committee like Clear Skies or the Clean Power Act and the Clean Air Planning Act. In the context of national pollution programs like those, how important is it, do you think, to maintain State and local authority to address residual pollution?

Mr. WERNER. I think it is absolutely critical, sir, respectfully. It is, as I said, a team effort. There have to be the Federal programs for particularly large sources, the large powerplants. There are big issues that have yet to be addressed, a lot of diesel work that you are providing leadership on. We have to have the ability to do our own controls. I mentioned our efforts on lightering for tanker VOC reduction.

If I could, I would like to come back to the relationship with the contemplated legislation on Clear Skies. I didn't mean to suggest, Senator Voinovich, at all, that it wouldn't be useful. It was simply a concern that whatever is done in that area we would just as that care be taken, no pun intended, that we make sure that it really has value added beyond CAIR, that there are a variety of multi-pollutant legislation bills considered.

Some have more consideration than not for different sources and deadlines. We just hope and ask that you make sure that it really has value added for all the States as a small downwind State.

Senator VOINOVICH. Have you ever looked at it in terms of your State, in terms of the levels and how those levels would be better than, say, CAIR, or what levels would help you?

Mr. WERNER. There are certainly some that are better than others. I would be remiss if I didn't say that we like Senator Carper's among the legislation.

Senator CARPER. God bless you.

[Laughter.]

Senator VOINOVICH. We are anxious to have Senator Carper's proposals, so we can negotiate something. I am anxious to do it, because I really believe that we would be far better off with legislation than we are with the CAIR rules that are already being questioned and lawsuits filed and all kinds of other things.

Mr. WERNER. Yes, absolutely.

Senator VOINOVICH. That's been—we have an environmental policy by litigation, just go back to 1997, 2005, here we are. So I'm stepping on your time.

Senator CARPER. That's OK.

Let me ask one if I could of Mr. Olens. You mentioned your great admiration for Senator Isakson. I would just say that those of us in Delaware have a real high regard for him, too, and thanks for sharing with us.

You said in your testimony that in Georgia you were not hearing that attainment deadlines associated with new standards are a concern. I think that's what you said. If we are hearing anything, it is that we need to address those standards in a timely manner.

Do you feel, even with the late release of EPA's guidance to States that you will be able to prepare an adequate SIP?

Mr. OLENS. Senator, we won't meet the 8-hour ozone standard in 2007. We are looking at 2010. We will then reclassify from marginal to moderate. The delays clearly adversely affect implementation.

We have a great partnership between the MPO and the EPD, which is the State equivalent of the EPA. After 15-plus years of dealing with these issues, we are more ahead of the game than regions that are for the first time dealing with nonattainment issues. There is the good news with the bad news, after you have been doing this 15 years, you have a lot of the control measures, you have a lot of the policies in place.

With regard to the $PM_{2.5}$ standard, we have no expectation that that will be easy, either. Delaying the rules adversely affects this too. What I stated in the introductory report was that we will do our best between the MPO and the State to get there. Keep in mind in January 2004, we reclassified from serious to severe under the 1-hour ozone standard. So the idea of having the Atlanta Journal reference that we went from marginal to moderate doesn't have the same negative connotation to me as the front page that said reclassification to severe under to the 1-hour ozone standard.

So we are ahead of other regions with regard to having been through this process. But clearly the delays with rules and the delays with implementing controls adversely affects all of us. It is my expectation that, for instance, with the 8-hour ozone standard, we won't meet 2007 and we will go to moderate and hopefully will meet it in 2010.

Senator CARPER. All right, thanks very much. Again, our thanks to each of our panelists. We appreciate very much your testimony today, but also your service to our State and to our respective States. Thank you.

Senator VOINOVICH. Senator Isakson.

Senator ISAKSON. Sam, in your testimony you said if we have learned anything over the last 15 years, it is that flexibility is important in terms of reaching the appropriate solutions in terms of pollution. We must have the ability to implement innovative, proactive measures to improve our own air quality. Do you have any suggestions for us as to what we can do as a Congress or what the EPA as an agency can do to provide that flexibility?

Mr. OLENS. For instance, you heard today, Senator, from both the gentleman from Baton Rouge as well as myself, that EPA didn't grant us the 2-year waiver for the RFG. It is nonsensical that we are being asked to use fuel that will actually worsen our air, rather than improve our air. In fact, the fuel that I believe Senator Voinovich referenced earlier, or Senator Carper, that takes effect in October 2006, that low-sulfur is once again not as clean as the low-sulfur we currently use in our State.

So once again, we need you to provide that flexibility where EPA looks at the uniqueness of each region and lets us do what actually improves the air best in our region, rather than a one-size-fits-all scenario. So I really think flexibility, as you referenced it, is the main key for all of us.

Every region is different, and we have to be given that flexibility. Whether it is through the rulemaking, whether it is through the actual Clean Air Act, there doesn't appear to be sufficient flexibility now to really do what needs to be done.

Senator ISAKSON. I want the record to reflect that Sam had no idea I was going to ask that question, I had no idea what his answer would be, and I have never met Mr. Moret from Baton Rouge, but I want to read a sentence from your testimony.

"However, it is important to note that the existence of judicial proceedings was the only avenue available to EPA under the Clean Air Act to review the use of reformulated gas in Baton Rouge." I think that, combined with the answer that Commissioner Olens gave, is the message to all of us that the Clean Air Act has the Agency's hands tied, which in turn ties the hands of the local community. In this particular case, the unintended, because it would have never been intended, consequence of Federal action is to require two areas to sell a gas that pollutes worse than the gas they are selling now. That doesn't make any sense to anybody.

Furthermore, the courts end up being the ultimate arbiter of plans and flexibility and proposals to clean up our air. With all due respect to the judiciary, and for that matter to, I will use myself as an example, I read my briefing papers on this last night, and you get into even a simplified explanation of NOx, SOx, particulate matter, things to the seventh power, I mean, it's impossible to understand. I wonder how nine men and women in black robes in a court can have any better luck with it.

So I think the lesson that we are hearing from these gentlemen is that it is very important that we in Congress give the Agency the directions, but also the flexibility to work with the communities on those things that by virtue of nature, location or proximity affect their ability to be in attainment. That's where we have tied the hands of the Agency statutorily, which in turn has tied the hands of local communities that are trying to do their thing.

I would submit to you also it is probably the reason that our previous witness could tell you that in 2015 80 percent would comply and 20 percent wouldn't. Because they pretty much know because of the rigidity of the situation how little flexibility there is and how some people are not going to be able to comply no matter what happens. So that was not a question, that was a statement, but I had to throw that in since these two gentlemen said exactly the same thing.

I yield back.

Senator VOINOVICH. Thank you, Senator Isakson.

I too was perplexed, and as I recall, I think that under the law, not only can they mandate reformulated gasoline but they can also mandate emissions testing, too, if you are in a moderate attainment area.

Did I hear correctly that somebody talked about a waiver? Could the EPA grant a waiver from the RFG for a couple of years?

Mr. OLENS. Senator, we requested a 2-year waiver, and it was declined.

Senator VOINOVICH. OK, so the point is that, the testimony was that they had to go to the RFG, but you are telling me that the EPA does have the flexibility that they could waive that for 2 years, is that correct?

Mr. OLENS. Yes, sir.

Senator VOINOVICH. So I was just thinking, Senator Isakson, maybe we need some law, but if they have that right to do that—the lack of flexibility is something that all three of you would agree needs to be really looked at in terms of the Environmental Protection Agency.

[Witnesses nod in the affirmative.]

Have you calculated the impact on your economy of being in noncompliance? You say you are not going to meet the deadline of 2010. What implications does that have in your community in terms of jobs?

Mr. MORET. Senator, the impacts are on multiple levels. There are impacts of being in nonattainment from the perspective that many manufacturing facilities, many of them cleaner manufacturing facilities like automobile assembly plants, often will not consider our area because of the permitting challenges.

Senator VOINOVICH. In other words, the fact is that, as I found this as Governor, that is why I worked so hard to get us into attainment, because my conclusion was that if it looks like you are not in attainment, people that you would like to bring to your community just fly over you, they ignore you.

Mr. MORET. That is absolutely right.

Senator VOINOVICH. The next issue would be expansion of businesses. Why don't you get into that a little bit?

Mr. MORET. If you think about how companies make site selection decisions, it is really first a site elimination process, and looking at factors that might make a community an unattractive place in which to invest. We know many examples that the Baton Rouge area, because of its nonattainment designation, even though we are only in marginal nonattainment by a very, very small amount, that we have lost out on many large clean projects that otherwise would have gone to our area.

On the other hand, I mentioned to you earlier the issue of the transition from the 1-hour standard to the 8-hour standard. Under the 1-hour standard, we were slated to have up to $100 million a year in penalty fees for our local and regional industry. Very significant restrictions on permitting, expansion projects and so forth.

So we actually, before Hurricane Katrina, had identified this as actually the single biggest economic threat facing the Baton Rouge area. The structure of that set of requirements and penalties is such that it would have had an impact, we estimate, of around half a billion dollars a year drain that really would have never gone away, on top of the challenge that is already faced by a community like ours of having a nonattainment label, if you will, on your community.

Senator ISAKSON. Mr. Chairman, can I just interject?

Senator VOINOVICH. Go ahead.

Senator ISAKSON. One of the important points about the economic consideration is not choosing dollars over health, but economic development provides the resources that allow communities to meet the challenges financially to improve the quality of the air. You actually have, again unintended, but actual consequence, as Stephen has said here, of industries, non-polluting industries, flying right over you and going somewhere else. We actually, if we aren't careful, can promote outsourcing by virtue of an overly regulatory environment without the flexibility to meet the standards.

Nobody in here has said anything other than they all want to be compliant. Everybody wants clean air, and every community in

America has cleaner air than it had at the time the Clean Air Act was passed. We are moving in the right direction. I think we are now at the critical point where in the absence of flexibility and in the absence of some reasonable approaches, we could take areas hardest hit and actually reduce the resources they will have available to them to comply with the act and put them in a very static economic condition which would even compromise that further. So your point is well taken and the testimony today I think has reflected exactly that result if we are not careful.

Senator VOINOVICH. The other interesting thing is that, this gets into the whole issue of carbon. Back when I was Governor, the options to go other places were less than they are today. So if I am a business person and I can locate a facility somewhere, in the old days it was competition among jurisdictions in the United States.

But the competition now has changed dramatically. If I am a businessman and I can put a plant in China and I can come up with lower costs and I don't have the environmental costs that I have if I am in the United States, I don't have the health care costs that I have, my energy costs are lower, I finally conclude, I'm leaving. It seems to me that if we don't start looking at—that gets back to this whole concept of harmonizing energy, environment and the economy. There has to be some compromise made here, because I have been here, this is my 7th year, it just seems like groups are going different directions. The only major improvement I have seen is on this retrofitting of diesel engines, we got the groups together.

But unless there is some kind of coming together, a compromise, I just see that we are going to lose more and more jobs in this country to other places. We won't have the money to buy the technology that we need to further move forward with doing a better job of taking our missions.

So there just has to be some type of balance here. I get back to Mr. Werner, you were talking about the health care benefits. I just asked my staff, I would really like to see how that works out in terms of the costs that are involved. You talked about asthma, the Senator from New Jersey always brings up asthma.

I remember testifying, I think before this committee, back when I was Governor on the whole issue of asthma and what causes asthma. We said, "well, it's the air that people are breathing." Some of the experts say that if you did a better job of cleaning places, the health code, and putting an air conditioner in someone's house, you would do more to help their asthma than if you spent all the money to reduce the emissions in the air on the outside.

So the point is that, some of these things have to be worked out. There is some balance that has to be struck in order for us to take care of our health needs, for sure. But we also have to pay attention to what our economic needs are also, or we are going to be in deep trouble.

Mr. WERNER. Senator, if I could please.

Senator VOINOVICH. Yes.

Mr. WERNER. I well appreciate the concerns about costs. Again, we are the people who sit across the table every day talking with our colleagues and our neighbors who have to run businesses. One of the things that we hear is it is not so much the costs of the control equipment, but really the costs of the uncertainty and the costs of delay. That is why we are working so terribly hard to improve the efficiency, because we again hear that directly. Maybe that is slicing it too finely, what the type of costs we are considering.

We hear, we don't mind putting in the controls, but we want to know clearly what do you need and we want to have a permit relatively quickly, so we can move ahead. It gets back to the notion of harmonizing, perhaps adding on to your concern. So that as they are constructing, they are looking at schedules for building or expanding or something, they have a schedule that includes the environmental considerations and not as an add-on, oh, by the way, you put it into the overall scheduled things you are doing. Those are the bigger costs, it is really not so much of whether we comply or we clean the air but how we do it and having the flexibility and a harmonized solution. Again, I just hope the word harmonization doesn't result in just simply delays overall.

Senator VOINOVICH. I think that one of the things that was in our Clear Skies legislation was that if you had communities like Baton Rouge that were moving along and that would be in compliance by 2015, say, for example, that the draconian provisions of the Act wouldn't come down on their back. Right now, 2010 comes along and boom, it happens.

The other thing that I think was good about it is that everybody knew exactly what the rules would be, it would be in legislation so that the power companies, and I know you are concerned about ozone transport, would know full well, here's the deal and they would move forward. They are talking about investing $50 billion and doing some stuff that maybe some of them should have done before but they didn't do it because of questions about new source review. We cleared up new source review issues.

I honestly believe if we can eliminate these uncertainties as we did with the acid rain provisions of the Clean Air Act, at least we knew what they were, I think we would be much better off. We have had the same thing with the issue of carbon, we have to have carbon controlled in our pollution control legislation.

I hear from the Adirondack Council and other places, they say, "look, while you guys are just kind of pish-poshing around, we are still seeing the acid rain here." Do NOx, SOx, do mercury, work out some kind of a compromise on carbon, but let's get moving. Let's get it done, we're waiting.

I just want to say thank you very much for your being here. We appreciate the perspective that you brought to the committee. Senator Isakson, do you have any other questions?

Senator ISAKSON. No. Thank you, Mr. Chairman, for holding the hearing.

Senator VOINOVICH. Thank you very much for being here.

[Whereupon, at 11:26 a.m., the subcommittee was adjourned.]

[Additional statements submitted for the record follow.]

STATEMENT OF SENATOR JAMES M. JEFFORDS, U.S. SENATOR FROM THE STATE OF VERMONT

The National Ambient Air Quality Standards are the cornerstone of the Clean Air Act. Their implementation is a matter of life and death for millions of Americans.

The EPA itself has stated that "batteries of scientific studies have linked particulate matter, especially fine particles . . . with a series of significant health problems, including premature death."

Researchers at Harvard University have concluded that approximately 70,000 Americans die prematurely as a result of air pollution. The primary cause of these deaths is fine particulate matter, which is emitted from sources such as powerplants, diesel fuel combustion and other sources. However, recent evidence also indicates that ozone contributes to premature mortality as well.

Other health effects, such as increased risk of stroke, increased asthma, and other respiratory symptoms requiring hospitalization are also caused by air pollution.

The National Ambient Air Quality Standards for Particulate Matter and Ozone are necessary to protect against these effects and to protect public health "with an adequate margin of safety."

Although EPA recognized these facts in 1997 and set appropriate standards, we remain on the threshold of implementing such standards.

The fact that we have taken nearly a decade to move forward is a shameful fact. Tens of thousands of Americans have suffered in the meantime and will continue to suffer, or even die, each year that we delay.

There are many reasons for these delays, but we must not forget that industry challenged these standards and EPA was forced to go all the way to the Supreme Court to defend them. Now many of these same parties seek to further delay implementation of the standards.

Since the Supreme Court decision in 2001, EPA has moved very slowly to develop the rules that States need to implement these standards.

EPA has only yesterday finalized its complete set of ozone implementation rules and only last month did it propose a PM Implementation Rule—after that rule sat at the Office of Management and Budget for nearly a year. That leaves us without a complete set of implementation rules more than 8 years after the standards were first set.

At the same time, we have seen numerous attempts to substantially weaken the Clean Air Act. These include changes to New Source Review that allow legions of large polluting sources to continue emitting without controls, changes to the mercury rules that allow toxic levels of mercury to be emitted and traded, and a host of implementation rules that postpone key local controls until 2015 or beyond.

The net result of these policies is that millions of Americans will continue to suffer the ill effects of air pollution, including premature death, for many years to come.

It is high time that we implement the standards that the Supreme Court unanimously upheld nearly 5 years ago. It is high time that EPA provides States with the tools they need to continue cleaning up the air. It is high time that EPA stopped looking to undermine key provisions of the Clean Air Act and seek to enforce those requirements to the full extent of their abilities.

There may be some at this hearing that believe we need additional time to implement these standards and that we should put priority on keeping the costs of air pollution control as low as possible in the short term. To them I say we cannot afford those delays. We cannot afford to continue to expose our citizens to increased death and chronic health effects from air pollution. All of the EPA analyses show that the benefits of controlling these pollutants greatly outweigh the costs of cleanup.

During the 1990s we made substantial progress in cleaning up the air during a period of great economic growth. That record demonstrates that we can have a healthy economy and clean air at the same time. I am not willing to sacrifice the health of millions of Americans based on the faulty premise that clean air costs jobs. Clean air creates jobs and saves lives.

Others may say we need certainty of requirements before we can begin to take action. To them I say there is no certainty in strategies of delay and waiting for others to reduce, there is only certainty in committing now to getting the job done and requiring everyone to do their part.

We should also recognize that areas that fail to control local sources of pollution and that are waiting for national and regional measures to work are consigning both their own citizens and the citizens of areas downwind to additional health effects. Vermont is such a downwind State. Last summer, schools in my State were forced to postpone sports events due to air pollution, most of which came from outside the State.

EPA's plan would be for States like Vermont to continue to receive dirty air from other States for many years to come. That result is unacceptable.

This is no time to contemplate further delay. We need to move forward as quickly as possible in implementing these standards. We need additional reductions well beyond those proposed by EPA. Even under EPA's plans, many will continue to breathe unhealthy air after 2020. At that point, the Clean Air Act will be half a century old.

I believe we must work harder to realize the promise that this committee made in the original Clean Air Act of 1970, when it directed that we would attain Clean Air standards "as expeditiously as practicable" and that we would "protect public health with an adequate margin of safety."

That promise, which remains in the law today, cannot be kept by plans that allow millions of Americans to breathe unhealthy air for decades to come.

Finally, I want to note that we continue to allow dangerous emissions of greenhouse gases into the atmosphere and our continued delay in that regard risks untold consequences, to human health, to our environment and to the well-being of mankind as a whole. That situation must change, and it must change soon, if we are to fulfill our obligation to leave this world in better shape than when we found it.

STATEMENT OF WILLIAM WEHRUM, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY

Thank you Mr. Chairman and members of the Environment and Public Works' Subcommittee for the opportunity to speak with you today about implementing the National Ambient Air Quality Standards (NAAQS) for fine particles and ground-level ozone.

There is no doubt that emissions of key pollutants into the air are going down in the United States. America's air is the cleanest in three decades. Emissions have continued to decrease even as our economy has increased more than 150 percent. Since 1970, the aggregate total emissions for the six pollutants [Carbon Monoxide (CO), Nitrogen Oxides (NOx), Sulfur Dioxide (SO_2), Particulate Matter (PM), Volatile Organic Compounds (VOCs) and Lead (Pb)] have been cut from 301.5 million tons per year to 138.7 million tons per year, a decrease of 54 percent. Total 2004 emissions were down 21.5 million tons since 2000, a 13.4 percent reduction.

The Clean Air Act has been a critical driver of that success. The goal of the Clean Air Act is to bring all areas into attainment with national air quality standards, so that the air is healthy to breathe for residents of every neighborhood, town, city and county. The Clean Air Act provides us with the structure for achieving that goal as expeditiously as practicable. In addition to setting the air quality standards, EPA establishes national emissions standards for certain important sources, such as motor vehicles, and requires States to control interstate pollution transport.

The Act requires States to take the lead role in studying the unique air pollution problems in their areas and in crafting State Implementation Plans that contain strategies for solving them. EPA assists the States by providing technical support, for example, on emission reduction measures and costs. Together, we will find an appropriate mix of national, regional, State, and local measures to bring all areas into attainment with the national standards.

The record of the Clean Air Act demonstrates that the structure outlined in the law is sound. For example, we designated 101 areas as nonattainment for the 1-hour ozone standard. Seventy-nine of them have met that standard. The story is similar for particulate matter smaller than 10 micrometers (PM–10) and carbon monoxide nonattainment areas. Eighty-seven areas were designated nonattainment for PM–10 in the early 1990s. Sixty-four now meet that standard. For carbon monoxide, air quality in all of the original 43 nonattainment areas now meets the NAAQS. Even in cities that have not attained the 1-hour ozone or PM–10 standards, the number of days above the standards is down significantly. By any measure, this is a success story.

EPA has put in place national and regional pollution control programs that will go a long way toward assisting the States in solving the fine particle and ozone nonattainment problems. Our modeling indicates that by 2010, 18 of the 39 areas currently not attaining the fine particle standard will come into attainment with the regulatory programs already in place, including the Clean Air Interstate Rule, Clean Diesel Rules and other Federal measures even assuming no additional local controls are adopted. Four more $PM_{2.5}$ areas are projected to attain the standards by 2015 based on the implementation of these programs.

The story is also good for ozone. 104 of the 126 current 8-hour ozone nonattainment areas will attain the NAAQS by 2010 because of national mobile and stationary source control programs. By 2015, modeling shows that only 10 8-hour ozone nonattainment areas will remain.

These EPA programs are an excellent example of where Federal and regional programs can assist the States in meeting their obligation to attain national air quality standards. For areas that will still be out of attainment with the ozone and $PM_{2.5}$ standards, States will need to take additional local steps to reduce ozone and fine particles from other sources. In many cases, this burden will be lighter due to Federal programs.

Today, I would like to give you an overview of the fine particle and ozone problems, some of the key national rules that will help reduce levels of these pollutants, and ways in which EPA is assisting the States as they develop plans to achieve these air quality standards.

FINE PARTICLE AND OZONE HEALTH EFFECTS

Americans will realize significant health benefits when all areas of the country meet the 8-hour ozone and fine particle standards. Ground-level ozone continues to be a pollution problem in many areas of the United States. Ozone (a major component of smog) is a significant health concern, particularly for people with asthma and other respiratory diseases, and children and adults who are active outdoors in the summertime. Ozone can exacerbate respiratory symptoms, such as coughing and pain when breathing deeply. Ozone may reduce lung function and inflame the linings of the lung. Ozone has also been associated with increased hospitalizations and emergency room visits for respiratory causes. Repeated exposure over time may permanently damage lung tissue.

Ozone is rarely emitted directly into the air but is formed by the reaction of volatile organic compounds (VOCs) and NOx in the presence of sunlight. Ground-level ozone forms readily in the atmosphere, usually during hot summer weather. VOCs are emitted from a variety of sources, including motor vehicles, chemical plants, refineries, factories, consumer and commercial products, other industrial sources, and biogenic sources. NOx is emitted from motor vehicles, powerplants, and other sources of combustion. Changing weather patterns contribute to yearly differences in ozone concentrations from region to region. Ozone and the pollutants that form ozone also can be transported into an area from pollution sources located hundreds of miles upwind. Based on 2002–04 data, more than 138 million people live in nonattainment areas that violate the 8-hour ozone standard.

Of the many air pollutants regulated by EPA, fine particle pollution is perhaps the greatest threat to public health. Dozens of studies in the peer-reviewed literature have found that these microscopic particles can reach the deepest regions of the lungs. Exposure to fine particles is associated with premature death, as well as asthma attacks, chronic bronchitis, decreased lung function, and respiratory disease. Exposure is also associated with aggravation of heart disease, leading to increased hospitalizations, emergency room and doctor visits, and use of medication. Based on data through 2004, 90 million people live in areas not attaining the fine particle standards, primarily in California and in the eastern half of the United States.

Particulate matter is the general term used for a mixture of solid particles and liquid droplets found in the air. $PM_{2.5}$ describes the "fine" particles that are less than or equal to 2.5 micrometers in diameter. $PM_{2.5}$ is formed mostly through atmospheric chemical reactions. These reactions involve a number of precursor gases including sulfur dioxide from sources such as industrial facilities and powerplants; nitrogen oxides from sources such as automobiles, diesel engines, powerplants and other combustion sources; carbon formed from organic compounds, including a number of volatile organic compounds from automobiles and industrial facilities; and ammonia from various sources. $PM_{2.5}$ can also be emitted directly from certain sources, such as industrial facilities, diesel engines and fire. $PM_{2.5}$ concentrations can be elevated at all times of the year, not just in the summertime. Changing weather patterns contribute to yearly differences in $PM_{2.5}$ concentrations from region to region. Also, $PM_{2.5}$ can be transported into an area from sources located hundreds or thousands of miles upwind.

NATIONAL PROGRAMS

There is no doubt that emissions of key pollutants into the air are going down in the United States and that the Clean Air Act has been a critical component of that improvement. Congress carefully laid out the role that States and EPA must play in implementing the NAAQS. Among other things, EPA is responsible for setting the standards, designating areas as attaining or not attaining the standards, addressing the regional, national, and international aspects of air pollution problems, and helping the States deal with problems that are generated locally. States are given the primary responsibility for assuring that air quality within its borders is maintained. This is achieved through source-specific requirements in State Implementation Plans.

Several Federal programs already in place will help bring many areas into attainment and help others come much closer to attainment, thus making the burden of local controls lighter.

MOBILE SOURCE SECTOR

It is no surprise that the transportation sector—cars, buses, and trucks—contributes a significant amount to air pollution problems in many communities. Emissions of NOx, PM and other pollutants have been and will continue to decrease significantly as a result of the successful implementation of the series of EPA regulations controlling emissions from new mobile sources and the fuels they use.

Most recently, EPA has adopted emission standards for new nonroad diesel engines used in construction, agricultural, and industrial operations. These engine standards will be combined with very low sulfur limits in the fuel for these engines, which will allow optimal performance of the engines' pollution control equipment. EPA's nonroad standards are estimated to reduce 129,000 tons of PM and 738,000 tons of NOx in 2030, and prevent annually 12,000 premature mortalities, 15,000 nonfatal heart attacks, and almost 9,000 hospital admissions.

Fine particle and ozone pollution will also decrease as a result of EPA's 2007 Clean Diesel Truck and Bus Rule to clean up pollution from new diesel trucks and buses. When fully phased in, these rules will result in diesel trucks and buses being 95 percent cleaner than today's models for smog-causing emissions and 90 percent cleaner for particulate matter. The rule also requires very low sulfur diesel fuel to enable the use of advanced aftertreatment technologies. We estimate that this program will prevent 8,300 premature deaths and 1.5 million lost work days among other quantified benefits.

As a result of this program, there will be a dramatic transformation of diesel engines over the next decade. The benefits of these rules will be added to those from two other mobile source rules. Starting with the 2004 model year, cars and light trucks must comply with the Tier II program which established tighter tailpipe standards and limited the amount of sulfur in gasoline. The program will be fully phased in by 2009. This rule requires for the first time that larger vehicles like SUVs, minivans and pick-up trucks meet the same tailpipe emissions standards as cars. The associated gasoline sulfur standards will ensure the effectiveness of emission-control technologies in vehicles. These new standards require passenger vehicles to be 77 to 95 percent cleaner than those on the road today.

We have a number of other nationally applicable programs that will achieve needed reductions, such as new standards for motorcycles and lawn and garden equipment. We are also working on new requirements, for sources like locomotive and marine engines, which will help States meet their clean air goals.

VOLUNTARY PROGRAMS

In addition to our regulatory programs, EPA has a number of innovative voluntary programs that work to achieve measurable environmental results in a cost-effective and beneficial way without the need for regulation. These programs are available to assist States and Tribes in implementing programs that reduce ozone and particulate matter. I want to thank you, Mr. Chairman, for the leadership you have shown in the effort to reduce diesel emissions. Your recent legislation, included in the Energy Policy Act of 2005, shows strong support for voluntary retrofit programs.

National Clean Diesel Campaign

Building on the successes of EPA's regulatory and voluntary efforts to reduce emissions, the Agency created the National Clean Diesel Campaign (NCDC) to address the important issue of diesel emissions. The National Clean Diesel Campaign encompasses the stringent regulations that reduce emissions from new engines and addresses the more than 11 million engines in operation today through voluntary approaches. Successful programs like the Clean School Bus USA and the SmartWay Transport Partnership are important parts of the NCDC. Technical and financial assistance is provided to stakeholders interested in reducing their emissions effectively and efficiently. Strategies include reducing unnecessary truck and rail idling along major transportation corridors and in rail yards, use of ultra-low sulfur fuel in advance of Federal compliance dates, replacing old vehicles or engines with cleaner new models, installing "retrofit" control technologies on existing vehicles or engines, and other approaches. NCDC projects exist in 44 States.

The National Clean Diesel Campaign has created a number of tools to assist States and local governments in reducing diesel emissions. EPA provides technical assistance to help educate stakeholders on the wide array of clean diesel technologies and strategies that can be used to cost effectively reduce diesel pollution. NCDC's vendor-funded technology verification program evaluates the effectiveness and efficacy of clean diesel technologies so that users of the technology can be assured that the emissions benefits captured in the field match those advertised by the manufacturer. The Agency has also created peer-reviewed emission models and provides State Implementation Plan (SIP) guidance to State air partners so that they may implement clean diesel strategies as cost effectively as possible. In the coming months guidance for quantifying and using diesel retrofit projects in SIP and conformity plans will be made available and the Agency is also working with the Department of Transportation to provide guidance for utilizing Congestion Mitigation and Air Quality Improvement Program funding for diesel retrofit projects.

MARKET-BASED PROGRAMS

Emissions from powerplants contribute to most of the nonattainment areas in the eastern United States. The nitrogen oxides and sulfur dioxide from these facilities mix with emissions from local and biogenic sources to cause ozone and fine particle problems. Through market-based programs, emissions from this sector have dropped and will continue to drop for years to come.

Since 1995, EPA has been implementing the Acid Rain Program to reduce SO_2 and NOx emissions from powerplants nationwide. The centerpiece of the program is an innovative, market-based "cap-and-trade" approach to achieve a nearly 50 percent reduction in SO_2 emissions from 1980 levels. The results of the program have been dramatic—and unprecedented. Compliance has been nearly 100 percent. Reductions in powerplant SO_2 emissions were larger and earlier than required, confirming the high value of a cap and trade system and the high value of its effects—earlier human health and environmental benefits. Now, in the 10th year of the program, we know that the greatest SO_2 emissions reductions were achieved in the highest SO_2-emitting States; acid deposition dramatically decreased over large areas of the eastern United States in the areas where reductions were most critically needed; trading did not cause geographic shifting of emissions or increases in localized pollution (hot spots); and the human health and environmental benefits were delivered broadly. Allowance trading provided sources with an incentive and the flexibility in developing a compliance strategy. It has reduced compliance costs by 75 percent from initial EPA estimates.

A similar cap-and-trade program has been incorporated into two other programs aimed at reducing the interstate transport of air pollution—the NOx SIP Call and the recently issued Clean Air Interstate Rule. The 1998 NOx SIP Call is showing results. To fulfill emission reduction responsibilities under the SIP Call, States are requiring powerplants and large industrial emitters in the eastern United States to reduce emissions of the ozone-precursor nitrogen oxide (NOx) during the summer months. After adjusting for the effects of meteorology, ozone levels across the East were on average 10 percent lower in 2004, the first full year of the program, than in 2002.

In March 2005, EPA issued the Clean Air Interstate Rule (CAIR), which will reduce powerplant emissions of sulfur dioxide and nitrogen oxides in 28 eastern States and the District of Columbia by 70 percent and more than 60 percent respectively from 2003 levels when fully implemented. This will go a long way to help many areas attain the fine particle standards and the ozone standards.

However, we have received 14 Petitions for Review and 11 Petitions for Reconsideration for the 2005 Clean Air Interstate Rule. EPA has also received two administrative stay requests; two judicial stay motions have been filed. While we are confident that we will prevail in the litigation concerning CAIR, there is always some uncertainty regarding the outcome of any litigation.

The Administration prefers to reduce emissions from powerplants through multipollutant legislation such as the President's Clear Skies legislation. The key difference between the Acid Rain Program and our cap and trade rulemakings is statute versus regulation. Congress enacted the Acid Rain Program in 1990. EPA has relied on authority in the Clean Air Act to put in place the NOx SIP call and CAIR. This authority is limited. Regulations do not provide enough certainty—that is why EPA has been urging Congress to pass a permanent, nation-wide solution, Clear Skies, which will result in substantial reductions in pollution, and help ensure stable and affordable energy costs for the American consumer.

In response to Senate requests in April of this year, EPA Administrator Johnson directed EPA staff to conduct additional analyses on a number of legislative proposals concerning control of powerplant emissions currently before Congress. This is a detailed, thorough, comprehensive legislative analysis—we believe it is the most detailed analysis we have produced for a Congressional debate ever. The analysis incorporates the latest computer models and assumptions to compare the President's Clear Skies legislation to several alternatives introduced on Capitol Hill—an apples-to-apples comparison.

President Bush and EPA are committed to working with Congress to enact Clear Skies legislation to cut powerplant emissions to help States meet air quality standards in a way that is consistent with a health economy. Clear Skies delivers dramatic health benefits across the Nation without significantly raising energy costs. Legislative enactment of Clear Skies will provide the certainty utilities need to build large new clean coal plants and incentivize efficiency at existing units, significantly reducing the potential for increased utility use of natural gas to meet demand and new air quality requirements. This will make more natural gas available to consumers and manufacturers. Clear Skies will significantly minimize the regulatory impact on electricity prices for households and manufacturers. I urge the Committee members to avail themselves of this detailed analysis.

WORKING WITH STATES & TRIBES

To help States implement the NAAQS, EPA has developed analyses and analytical tools that can help States assess their air quality problems and evaluate potential control measures. EPA is working to provide implementation guidance to States on the minimum requirements for their State implementation plans. In addition, we have worked with States to achieve ozone reductions earlier than required through their voluntary participation in the Early Action Compact program.

We issued Phase 1 of the Ozone Implementation Rule in April 2004, at the same time that we designated nonattainment areas and attainment areas for the 8-hour standard. This rule established classifications for the 8-hour ozone NAAQS; outlined the attainment dates for the 8-hour standard, revoked the 1-hour ozone NAAQS; established how anti-backsliding principles will ensure continued progress toward attainment of the 8-hour ozone NAAQS; and described the timing of emissions reductions needed for attainment.

We have just issued the second part of the Ozone Implementation Rule. It includes, among other things, our interpretation of requirements for reasonably available control measures, reasonably available control technology, attainment demonstrations and modeling requirements, and new source review guidelines for the 8-hour ozone nonattainment areas. States will have until June 2007 to formulate their State Implementation Plans. Together, this rule and the Phase 1 Ozone Implementation Rule issued a year and a half ago, provide a complete framework to guide development of State Implementation Plans, including detailed guidance on many implementation issues.

EPA has also proposed the Fine Particle Implementation Rule. This 2005 proposal addresses the required elements of State Implementation Plans for the fine particle air quality standard, which are due in April 2008. The rule is based on the more general and more flexible Clean Air Act requirements for attainment planning (known as "subpart 1" of section 172). For example, this part of the Act provides flexibility on whether to require a specific multi-tiered classification system for nonattainment areas or not. In addition, it does not require specific control measures to be implemented in certain nonattainment areas, but instead provides the States with greater flexibility to design local control strategies to meet the attainment needs of each individual area.

We are also assisting the States in evaluating their options. EPA has included a general list of strategies in the implementation proposal that should be considered by the States in developing their plans, and the Agency has provided STAPPA/ALAPCO with grant funding to develop a $PM_{2.5}$ "menu" of control options document. The final document is expected by the end of this year or early next year.

The Clean Air Act presumptively requires each area to attain the $PM_{2.5}$ standard within 5 years of designation, by April 2010, with authority for EPA to grant a State an attainment date extension of up to an additional 5 years for a specific area. In order to be considered for an extension, a State would include such a request with its April 2008 submittal.

We acknowledge that we are late in completing these rules to guide States in developing implementation plans for the $PM_{2.5}$ and 8-hour ozone standards. I wish that the timeline for our rules could have been different. Some States have expressed concern about achieving the new ozone and $PM_{2.5}$ attainment deadlines. We are committed to assisting States as they work to identify local or regional control measures for their SIPs and of course, our Federal programs will provide significant reductions for these areas. The Clean Air Act does provide opportunities for an area under certain circumstances to obtain additional time and we are also committed to exploring these options if needed.

Beyond this, we are working to help States identify and implement strategies that can help cut emissions by issuing policies and guidance on specific implementation issues, providing technical assistance and analytical tools, and offering training and support for NAAQS implementation. And, in those cases where information gaps remain, we are working to close them as quickly as possible.

Please see attachment for additional details.

We appreciate the work that the States are doing to bring cleaner air sooner to the millions of Americans living in fine particle and 8-hour ozone nonattainment areas. It will be a challenge but national rules and State plans together will bring the health benefits of the fine particle and ozone standards to the American people. The numerous successes of the past inform our optimism toward the future.

Thank you. Mr. Chairman that concludes my testimony. Once again, thank you for inviting me to appear before this subcommittee. I would be pleased to answer any questions you may have.

ATTACHMENT

EXAMPLES OF POLICIES AND AGENCY GUIDANCE TO STATES

- 1997—"Mobile Source Voluntary Measures Policy"—supports the use of voluntary mobile source measures such as programs that reduce idling emissions from trucks, locomotives, and school buses, retrofit programs, commuter benefit programs such as parking cash-out programs, employer-based telecommuting programs, and small-engine buyback programs.
- 2001—"Improving Air Quality with Economic Incentive Programs"—provides information on developing and implementing economic incentive-based control strategies.
- 2004—"Incorporating Emerging and Voluntary Measures in a State Implementation Plan"—supports and encourages States to test new and innovative stationary source control strategies.
- 2004—"EPA and FAA National Guidance on Airport Emissions Reduction Credits for Early Measures"—allows airport sponsors to use certain funds to finance airport air quality improvements such as low emission vehicles, refueling and recharging stations and gate electrification. Credits generated by the emission reductions are kept by the airport sponsor and may be used for current or future general conformity determinations.
- 2004—"Guidance on SIP Credits for Emission Reductions from Electric Sector Energy Efficiency and Renewable Energy Measures"—provides a readily available procedure to quantify and validate emission reductions from specific energy efficiency and renewable energy measures and have these reductions applied to State Implementation Plans.
- 2004—"SIP Credit for Truck and Locomotive Idling Reductions"—offers guidance on using technologies to reduce air emissions from locomotives and trucks while idling, or replacing the need to idle.
- 2005—"Guidance on Incorporating Bundled Measures in a SIP"—provides provisional pollution reduction credits to States up-front from a group, or "bundle," of pollution control measures or strategies considered in the aggregate.
- 2005—"Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations"—helps States develop their emissions inventories.
- 2005—"Guidance for Creating Annual On-Road Mobile Source Emission Inventories for $PM_{2.5}$ Nonattainment Areas for Use in SIPs and Conformity"—describes how State and local agencies should prepare annual inventories for $PM_{2.5}$ SIPs or regional conformity analyses.
- 2005—"Guidance for Quantifying and Using Emission Reductions from Best Workplaces for Commuters℠ Programs in State Implementation Plans and Transportation Conformity Determinations"—describes how State and local agencies can gain emission credit for commuter benefit programs like Best Workplaces for Commuters℠.

TECHNICAL AND ANALYTICAL TOOLS

EPA is working closely with States to provide them with technical support for their modeling analyses, emissions inventory development, evaluation of costs for various control strategies, updated regional modeling, and air quality analyses. These technical and analytical tools will help States characterize their air quality problems and use the state-of-the-art methods to craft solutions.

- Reviewing a menu of control options for fine particles

• Developing a fast, flexible, and transparent tool for estimating health and environmental benefits of air quality improvements via the peer-reviewed BenMAP model

• Providing grants for State organizations to develop and distribute information about control strategies

• Improving and automating emissions inventory quality assurance tool to reduce staff effort at the State level, while improving the quality and reliability of the resulting emissions data

• Collaborating with the Department of Energy to improve the Community Multi-Scale Air Quality Model (CMAQ) that will help States develop their State Implementation Plans. States and Regional Planning Organizations can use the peer-reviewed "community' CMAQ model to evaluate regional and local emission reduction strategies for meeting ozone, $PM_{2.5}$ and regional haze goals

• Issuing guidance on the use of models and other analyses in attainment demonstrations for the 8-hour ozone NAAQS. This document provides important guidance to EPA Regional, State, and Tribal air quality management authorities and the general public on how to prepare 8-hour ozone attainment demonstrations using air quality models and other relevant technical analyses.

• Conducting regional air quality modeling analyses to help inform State and local agencies about contributions from upwind air pollution sources and the likely consequences of programs to reduce emissions from those sources.

• Collaborating with equipment manufacturers to develop, test, and improve measurement instruments, including continuous monitors, to assist States in obtaining better measurements and greater insight into the sources of air pollution.

• Developing the MOVES model for highway vehicles, a next generation model that can be used to estimate emission inventories and make county level projections through 2050.

TRAINING AND SUPPORT FOR PILOT PROJECTS

• Partnering with stakeholders to promote woodstove changeouts and other innovative programs with big local benefits in some areas

• Sponsoring meetings, workshops and conferences for State and local officials to share best practices.

• Collaborating with local and State officials to evaluate the effectiveness of control strategies in real-world settings

• Working in the Clean Energy-Environment State Partnership—voluntary partnership between States and EPA to assess clean energy potential and determine strategies for implementing policies that reduce emissions, save energy, strengthen State economies, and protect public health. Partners commit to working across key State agencies to ultimately develop a clean energy-environment action plan; EPA provides tools, resources, and access to experts to ensure States have the best information available as they decide steps and policies.

• Establishing and funding the Community Modeling and Analysis Center to support community-based air quality modeling. This Center provides model codes and documentation, on-line help desk, training courses, and workshops/conferences that help States in conducting air quality modeling for their ozone, PM, and regional haze State Implementation Plans.

RESPONSES OF WILLIAM WEHRUM TO ADDITIONAL QUESTIONS FROM SENATOR LIEBERMAN

Question 1. States are less than 1 year away from the time at which they must propose their State Implementation Plans for public review if they are to meet deadlines under the Clean Air Act. Why has it taken so long for the Agency to release final rules for the implementation of National Ambient Air Quality Standards for ozone and particulate matter? In expending the significant resources needed to develop the Clear Skies Proposal, the CAIR rule and other rules, did the Agency expend resources that could have been used to complete the NAAQS implementation rules earlier? Why did EPA not make getting out NAAQS Implementations rules its top priority in this area?

Response. EPA promulgated the 8-hour ozone and PM NAAQS on July 18, 1997. Due to litigation, the designations and implementation phases of the NAAQS process were delayed. In the case of ozone, EPA finalized designations for 8-hour nonattainment areas on April 30, 2004. Simultaneously, EPA issued the final Phase 1 implementation rule for 8-hour ozone. These two rules describe many of the key elements of the implementation framework for the 8-hour ozone standard. Specifically, the Phase 1 and Designations Rules established:

- which areas are in nonattainment;
- which areas are regulated under the Clean Air Act's basic subpart 1 requirements, and which are subject to the more detailed subpart 2 requirements and classification system;
- the maximum attainment date for each nonattainment area; and
- the required timing of emissions reductions necessary for attainment.

The Phase 1 rule also called for revocation of the 1-hour ozone standard for most areas in June 2005 and established anti-backsliding requirements to ensure continued progress toward attainment of the more stringent 8-hour ozone NAAQS as areas transition from implementing the 1-hour NAAQS to implementing the 8-hour NAAQS. EPA issued a separate rule addressing requirements for conformity of transportation plans and 8-hour ozone plans on July 1, 2004.

OMB received the Phase 2 ozone implementation rule for E.O. 12866 review on March 7, 2005. At that time, review of other Agency priorities, some of which had court-ordered deadlines—e.g., the Clean Air Interstate Rule (CAIR), Clean Air Mercury Rule (CAMR), and Best Available Retrofit Technology (BART) rules—took precedence over review of the Phase 2 rule. Also, EPA and OMB desired that the Phase 2 ozone implementation rule reflect careful consideration of the relationship between 8-hour ozone implementation efforts and these other rules.

On November 9, 2005, EPA issued the final Phase 2 rule. This rule includes, among other things, our interpretation of requirements for reasonably available control measures, reasonably available control technology, attainment demonstrations and modeling requirements, and new source review guidelines for the 8-hour ozone nonattainment areas.

States have already been moving ahead with their implementation plans. States, both individually and via cooperative regional organizations, are assembling emissions inventories, conducting air quality modeling, assessing the emissions reductions needed for attainment, and evaluating potential control measures. States will have until June 2007—more than 18 months after finalization of the entire regulatory framework for ozone implementation—to formulate their State Implementation Plans (SIPs). Together, the Phase 1 and Phase 2 ozone implementation rules provide a complete framework to guide SIP development, including detailed guidance on many implementation issues.

In the case of particulate matter (PM), EPA has also been working hard to provide States with appropriate tools and guidance to implement the 1997 air quality standards. Designations for the fine particle standards were completed in December 2004 (slight modifications were completed in April 2005). CAIR is one of the major tools that will help States in the East reach attainment with the 1997 standards—where the bulk of $PM_{2.5}$ nonattainment areas are located. EPA believes that it was essential to finalize CAIR before turning our attention to additional control requirements at the local level via the implementation rule.

OMB received the proposed $PM_{2.5}$ implementation rule for E.O. 12866 review in October 2004. At that time, review of other Agency priorities, some of which had court-ordered deadlines—e.g., the Clean Air Interstate Rule (CAIR), Clean Air Mercury Rule (CAMR), and Best Available Retrofit Technology (BART) rules—took precedence over review of the $PM_{2.5}$ implementation rule. Also, EPA and OMB wanted the $PM_{2.5}$ implementation rule to reflect careful consideration of the relationship between $PM_{2.5}$ implementation efforts and these other rules. The $PM_{2.5}$ implementation rule was signed by the Administrator on September 8, 2005 and published in the Federal Register on November 1, 2005. This proposed rule covers a wide variety of topics, such as:

- attainment demonstrations and modeling;
- reasonably available control measures (RACM);
- reasonably available control technology (RACT);
- policy on $PM_{2.5}$ and precursors such as SO_2, NOx, VOC, ammonia, and direct emissions (including organic carbon, elemental carbon and crustal material); and
- new source review (NSR) requirements

EPA will continue to work to issue the final rule as soon as we complete the public review and comment process. This rule will help States as they develop their nonattainment area SIPs, which must be completed by April 2008. If the final PM implementation rule is issued in summer 2006, as expected, States will have substantial time to rely on it as they develop their SIPs.

Question 2. The Agency issued its ozone modeling guidance only after most States had begun work on their SIPs. Why was this rule so slow in coming out and how long did it remain at OMB? Is the time now remaining adequate for all States to complete their work in accordance with this guidance?

Response. The original draft of the document "Guidance on the Use of Models and Other Analyses in Attainment Demonstrations for the 8-Hour Ozone National Ambient Air Quality Standards" was released in 1999 with a subsequent draft in February 2005. This technical guidance document is not a rule and was not reviewed by OMB. The draft guidance documents were developed after a comprehensive internal and external review by EPA, States, and stakeholders. After the release of the February 2005 draft, we again asked for and received comments from the EPA Regions, States and stakeholders. Based on these comments, a final version of the ozone modeling guidance document was released in October 2005. The final version of the modeling guidance contains some changes, but most of the changes affect the final steps in the SIP modeling process and therefore we believe that States should be able to complete their modeling and submit their SIPs in accordance with the schedule contained in the final 8-hour ozone implementation rule. In addition, the preamble to EPA's 8-hour ozone implementation rule states that we will generally review the demonstrations for technical merit using EPA's most recent modeling guidance at the time the modeling relied on in the attainment demonstration is performed. However, in almost all cases, we expect States will be able to complete their work based on the recommendations contained in the October 2005 final guidance document.

Question 3. EPA has determined that for purposes of RACT compliance under CAIR for Electric Generating Units qualifies, and thus that states upwind of Connecticut may meet their RACT obligations by participating in the CAIR cap and trade program for electric generating units. In fact, as much as 95 percent of the ozone in Connecticut's nonattainment areas is the result of transported air pollution. In addition, even after application of CAIR, in 2015 and 2020, Connecticut will remain in nonattainment for ozone. In what way does the CAIR rule and the Agency's approach to RACT for EGUs assist Connecticut in achieving the ozone NAAQS?

Response. We agree that much of Connecticut's ozone problem is due to interstate transport of pollution. EPA recently completed extensive analyses to evaluate the interstate contributions to downwind ozone nonattainment areas as part of the CAIR. We determined, for example, that in the absence of CAIR, six States (MA, NJ, NY, OH, PA, and VA) might contribute up to 93 percent of exceedance-level ozone in 2010 in Middlesex Co, CT. Thus, we determined that each of the six States makes a significant contribution to nonattainment in this county.

The Clean Air Act provides a statutory framework for nonattainment issues to be addressed. EPA has ensured regional action to reduce interstate ozone transport through CAIR. CAIR provides substantial air quality benefits for downwind areas significantly affected by transport of pollution from other States. EPA has set the CAIR NOx cap at a level that, assuming the reductions are achieved from electric generating units (EGUs), would result in EGUs installing emission controls on the maximum total capacity on which it is reasonable to install emission controls.

As discussed in EPA's 8-hour ozone implementation rule, we believe total NOx emission reductions from EGUs covered by CAIR would be the same with or without RACT. Under a cap-and-trade program such as CAIR, there are a given number of allowances that equal a given emissions level. In that rule we stated our belief that: (1) EGUs subject to the CAIR NOx controls meet the definition of RACT for NOx (in States that require all CAIR NOx reductions from EGUs); (2) requiring source-specific RACT controls on EGUs will not reduce total NOx emissions from sources covered by CAIR below the levels that would be achieved under CAIR alone; and (3) source-specific RACT could result in more costly emissions reductions on a per ton basis. Therefore, RACT and the CAIR/RACT provisions of EPA's 8-hour ozone implementation rule do not affect interstate transport in any significant way, and would not be expected to affect Connecticut's air quality situation in any significant way.

Question 4. Is there anything in the CAIR rule or in the Agency's current plans for implementing CAIR that would prevent States from including requirements for additional reductions at EGUs in their SIPs?

Response. No, States are free to require controls on any sources within their boundaries. However, EPA is strongly encouraging States to consider all emission reduction opportunities before prematurely reaching the conclusion that EGUs are the best source category for additional controls to address their nonattainment issues.

Question 5. As part of the followup to the November 10, 2005 subcommittee hearing regarding the Implementation of the Existing Particulate Matter and Ozone Air Quality Standards, you were asked about EPA's determination that for purposes of Reasonably Available Control Technology (RACT), compliance with the Clean Air

Interstate Rule (CAIR) qualifies as RACT. In your response, you indicated that "requiring source-specific RACT controls on EGUs will not reduce total NOx emissions from sources covered by CAIR below the levels that would be achieved under CAIR alone." However that response does not appear to answer the question. The question is whether or not a RACT requirement that functions in addition to CAIR would achieve additional reductions beyond CAIR and thus would help alleviate Connecticut's situation with regard to large amounts of interstate transport. Wouldn't a RACT that is not simply equivalent to a national cap and trade program provide additional reductions beyond that program? According to you, "RACT and the CAIR/RACT provisions of EPA's 8-hour ozone implementation rule do not affect interstate transport in any significant way, and would not be expected to affect Connecticut's air quality situation in any significant way." Doesn't that in fact support the point that the agency's chosen position effectively eliminates RACT as a basis for controls beyond CAIR? If it is your contention that RACT applied at all applicable sources in the CAIR region results in fewer reductions that CAIR please provide an analysis and documentation to support that conclusion.

Response. EPA has set the 2009 CAIR NOx cap at a level that, assuming the reductions are achieved from electric generating units (EGUs), would result in EGUs installing emission controls on the maximum total capacity on which it is feasible to install emission controls by 2009. The rationale for this approach is addressed in the November 29, 2005 final phase 2 8-hour ozone NAAQS implementation rule and is discussed more fully in the CAIR final rulemaking. RACT does not require installation of additional controls if it is infeasible to do so. Source-specific RACT requirements could drive up the cost of reductions on a per-ton basis compared to CAIR. Also, with the CAIR trading system in place, if a State did decide to place a specific emission limit on an EGU to meet a RACT limit, that EGU could sell any excess emissions allowances to another EGU source in the CAIR region, such that the same total emission reductions would be achieved in the CAIR region as without RACT. This is the expected result because RACT does not apply to all EGUs covered by CAIR. In fact, RACT potentially applies only to a subset of CAIR-affected EGUs. Thus, we do not believe that RACT in addition to CAIR would achieve additional emissions reductions in the CAIR region beyond those expected from CAIR alone. These findings are described in the preamble to the November 29 rule. We do not expect that a more quantitative analysis of specific RACT reductions would change these findings, and any such analysis would be speculative, since States generally determine RACT for NOx major sources on a case-by-case or source category basis.

RESPONSES BY WILLIAM WEHRUM TO ADDITIONAL QUESTIONS FROM SENATOR LAUTENBERG

Question 1. On October 13, 2005, EPA proposed further changes to the New Source Review program as it relates to utilities. That same day, Deputy Administrator Peacock released a memorandum related to NSR Enforcement (Peacock Memorandum). In that memorandum he stated that "in deciding which cases to pursue, it is appropriate to focus on those that would violate our NSR reform rules and our latest NSR utility proposal which the agency is releasing today." As a result of that policy we understand that EPA will not be pursuing future cases that would not trigger NSR under either EPA's Equipment Replacement Rule (68 Fed. Reg. 61248 (October 27, 2003)) or the NSR rule proposed on October 13, 2005.

As I am sure you are aware, the Equipment Replacement Rule was stayed by the United States Court of Appeals for the D.C. Circuit on December 24, 2003. However, the Peacock memorandum proposes to use that rule as a basis for not bringing enforcement actions, thereby giving that rule prospective and retrospective effect and effectively legalizing actions at sources that meet the requirements of the stayed rule but that do not meet the requirements of Federal and SIP-approved NSR–PSD rules. If, as the court found likely, that rule proves to be illegal, and source have made changes subject to NSR in reliance on the Peacock Memorandum, will EPA bring enforcement actions against such sources? If not, isn't EPA effectively legalizing questionable activity that the Court of Appeals has already signaled may not comport with the dictates of the law? What will EPA's answer be to judges that seek to minimize or eliminate penalties against such sources on the basis that EPA sanctioned such activity through the Peacock memorandum?

Has EPA analyzed the amount of emissions increases that will or could be allowed through such a policy? Considering that one pre-requisite for the court stay was the finding that EPA's Equipment Replacement Rule would cause "irreparable harm" to the public in the absence of a stay, why is EPA allowing unlawful activities that caused and will cause irreparable harm to the public to escape enforcement under the Peacock Memorandum? Does EPA intend for the enforcement policies announced in the Peacock Memorandum to preempt or otherwise affect the ability of States and citizens to enforce against activities that would violate existing NSR requirements but not the Equipment Replacement Rule or the October 13, 2005 rulemaking proposal?

Response. The regulated community must comply with all applicable regulations, including existing NSR requirements. As your question points out, the Agency's Equipment Replacement Rule (ERP) has been stayed by the U.S. Court of Appeals for the District of Columbia Circuit, and therefore the regulated community currently has no legal right to rely on ERP to avoid potential NSR liability. The "Peacock Memorandum" was not intended to circumvent the D.C. Circuit stay or "legaliz[e] questionable activity." Indeed, the Agency reserves its discretion to bring enforcement actions against companies that violate the law, including those that prematurely rely on ERP. EPA's enforcement resources are limited, and thus the Agency must expend its resources wisely. The Peacock Memorandum does not create any rights for the regulated community and is intended to help focus EPA's enforcement discretion on those cases that would have the biggest benefit for human health and the environment.

Question 2. On August 25, 2005, Adam Kushner, Director of the Air Enforcement Division sent a memo to William Harnett, Director of IPTID/OAQPS regarding the proposed New Source Review Clean Air Interstate Rule. In that memo, Mr. Kushner states that "the proposed rule will adversely affect our enforcement cases and is largely unenforceable as written." Did you review this memorandum prior to release of the proposal? Was this memorandum shared with the Department of Justice prior to Administrator Johnson signing the rulemaking proposal? Did the Department of Justice respond? Please provide any documents in EPA's possession that relate to the response of the Department of Justice.

Response. I did not review the Kushner memo prior to release of the NSR–EGU proposal. The memo was reviewed by my staff. The proposal reflects the agency's determination regarding this matter. I have been told by OECA managers that it was not shared with DOJ prior to Administrator Johnson's signature.

Question 3. Recent events suggest that Mr. Kushner's memo appears to have been accurate. Defendants in two existing NSR enforcement cases have already cited the proposal as grounds for a stay or summary judgment. In *U.S.* v. *AEP*, (Consolidated Civil Actions No. C2–99–1182 and C2–99–1250 (S.D. Oh.)), American Electric Power filed a motion for stay in which it stated that "USEPA's actions eliminate the need for further liability and future remedy proceedings" and that EPA's "admissions severely undercut Plantiff's liability claims." In *U.S.* v. *Cinergy*, (Civil Action No IP99–1693C–M/S), Cinergy filed for summary judgment stating that " The United States Environmental Protection Agency has now admitted—including as recently as three weeks ago—that it did not provide "fair notice" of the Clean Air Act New Source Review legal standards that Plaintiff attempt to apply in this case."

In light of these filings, how can you or EPA reasonably contend that these rules will have no impact on existing enforcement cases? What guarantee can you or EPA provide that the positions taken by the Defendants above will not be accepted by the courts? Did you or EPA consider the possibility that the statements cited by the defendants in the cases above might impact existing enforcement cases? Or did EPA consider that possibility and reject it? If so, why? In light of the filings in these cases has EPA or the Department of Justice undertaken a review of the impact on existing enforcement cases? Considering that some of these same defendants had filed similar motions in pending enforcement cases following adoption of EPA's ERP rule, why would EPA have jeopardized these same pending enforcement cases by issuing a rulemaking proposal that has now prompted the above motions filed in the AEP and Cinergy cases?

Response. The NSR rules plainly and expressly state that they are to be applied to changes that post-date the rules' respective effective dates and thus do not have any impact on the existing enforcement cases. EPA intends to continue to vigorously pursue the existing enforcement cases and other matters in negotiations. EPA did consider the impact that the rules would have on the existing enforcement cases. It is for that reason the rules plainly and expressly state that the rules are to be intended to only those changes that post-date the rules effective date. With respect to whether or not EPA or DOJ has evaluated, or is evaluating, the impact of the rules on the enforcement cases, it is EPA's long-standing policy to not comment on the specific enforcement sensitive aspects of individual cases.

Question 4. One of the approaches taken in the proposed rule is not new. EPA took public comment on basically this approach in 1996. In doing so, EPA noted that "one of the most troubling side effects" of the approach was that it "could ultimately stymie major new source growth by allowed unreviewed increases of emissions from modifications of existing sources." 61 Fed. Reg. 38250, 38270/2 (July 23, 1996). Moreover, in December 2002, EPA once again rejected this approach saying that it "could lead to unreviewed increases in emissions that could be detrimental to air quality." 67 Fed. Reg. at 80205 (Dec. 31, 2002). What, if anything has changed the agency's view with regard to the potential emissions increases that would result from the approach proposed in the rule? Would any perceived differences prevent the immediate local, regional or national unreviewed increases in emissions that led EPA to reject this approach in 2002? Although the proposal cites a number of benefits from the rule, none of these relate to decreased emissions or increased environmental protection. Instead the benefits cited relate to industry flexibility. Do the previous statements regarding this approach remain accurate? If not, why not?

Response. The previous statements referred to in the question do not apply to the recently proposed rule. The referenced statements (61 FR 38250, 38270/2; 67 FR 80205) were about an approach considered during the 1980's, commonly known as CMA Exhibit B. CMA Exhibit B is an emissions test that compares pre-change emissions based on design capacity (potential emissions) to post-change emissions based on design capacity (potential emissions).

Our proposed rule includes three options for determining an emissions increase at electric generating units (EGUs), none of which operate in the same fashion as the CMA Exhibit B test. For example, one option is an emissions increase test that is based on the current NSPS regulations, which compares the maximum hourly emissions achievable at an emissions unit during the past 5 years to the maximum hourly emissions achievable at that unit after the change. This option determines actual emissions based on current operating capacity, which is not the same as the approach in CMA Exhibit B. Furthermore, CMA Exhibit B proposed to use potential emissions to determine the amount of emissions that must be offset. We proposed to retain actual emissions for computing the amount or availability of emissions offsets. For these reasons, the maximum achievable hourly emissions option of our proposed rule for EGUs is not the same approach as CMA Exhibit B.

We do not expect the proposed rule would lead to emission increases from the power sector. To the contrary, emissions from the power sector are projected to decrease dramatically over the next two decades. This is attributable to several CAA programs, including the Clean Air Interstate Rule, the Acid Rain Program, and the Clean Air Visibility rule. We describe the EGU emission reductions from these regulations in detail at 70 FR 61084. We intend to present supporting analyses in our supplemental proposal, which should be published in the near future.

Question 5. In the Kushner memorandum, an attachment contains case studies that examine the potential effect of the EPA NSR proposal. Case study one appears to indicate that under the proposed approach, SO_2 emissions would increase by 13,096 tons per year. Case studies 2 through 4 also show increases in emission of SO_2 and NOx. What is the agency's position with regard to these case studies? Does the agency believe that its proposed changes will not allow such increases in emissions? On what basis does the agency reach such a conclusion?

Response. As previously noted, we intend to provide in the near future a thorough environmental analysis of the NSR proposal in a supplemental proposal.

Question 6. The EPA Office of Enforcement recently briefed EPA on its enforcement activities during the last year and noted that enforcement cases brought to conclusion during FY 2005 resulted in 1.1 billion lbs. of pollutant reduction from all media. Of these reductions, nearly half the reductions, in the vicinity of half a billion pounds, were from 2 NSR enforcement cases—the Illinois Power/Dynegy Case and the Ohio Edison case. And these benefits only take into account a single year of reductions, with the actual reductions going on for many years into the future. These two cases represent the vast majority of benefits from the top ten air cases, which had estimated benefits for a single year valued at $4.6 billion. If the Illinois Power/Dynegy and Ohio Edison cases had not yet been brought and instead were ready to be referred to the Department of Justice now, would they be eligible for filing under the Peacock memo? If so, how and why?

Response. EPA will continue to pursue existing filed utility cases and those matters in ongoing negotiations. Both Illinois Power and Ohio Edison are filed cases and were prosecuted to successful settlements. It is EPA's long-standing policy to not comment on specific enforcement sensitive aspects of individual cases.

Question 7. According to an article in Greenwire dated July 14, 2004, 14 NSR cases were referred to the Department of Justice (DOJ), but were not filed as of that date. In addition, 8 cases were being developed for possible referral to DOJ. Of these cases, how many would not be eligible for filing or referral under the Peacock memorandum? Have any of these cases been filed or referred since the July 14, 2004 story? How many? Have any of these cases been filed or referred since the Peacock Memorandum was issued? Will the agency be moving forward to file or refer any of these cases? When? Are there additional NSR cases for which EPA has filed section 114 requests or issued notices of violation? How many? Have any of these cases been referred or filed since July 14, 2004? How many? What are the plans for moving these cases forward?

Response. Since July 2004, with respect to Clean Air Act New Source Review utility violations, EPA has issued 4 information requests under Section 114 of the Clean Air Act, served 3 notices of violation, filed 0 complaints, and settled 2 cases. As to your remaining questions, EPA considers the status of individual referred cases or cases under investigation for possible referral to be enforcement sensitive information and thus it is EPA's long-standing policy to not comment on specific enforcement sensitive aspects of individual cases.

Question 8. Please indicate the number of cases that have been referred to EPA for prosecution of NSR violations since 1999, but have not yet been filed. Please identify these cases by company or facility name. Please provide EPA's position as to whether each of those cases should go forward. Do EPA's enforcement policies now exclude prosecution of these cases? If so, then do they qualify for an enforcement privilege? Please indicate, using aggregate figures what reductions in SO_2, NOx, mercury, ozone and fine particulate matter would occur if the facilities subject to these referrals installed SCRs (or operated existing SCRs year round) and FGDs within the next 3 or 4 years?

Response. EPA considers the status of individual referred cases or cases under investigation for possible referral to be enforcement sensitive information and thus it is EPA's long-standing policy to not comment on specific enforcement sensitive aspects of individual cases.

Question 9. We understand that 75 investigations were "suspended" by Assistant Administrator Suarez in November 2003. Are these investigations still suspended? Please indicate, using aggregate figures what reductions in SO_2, NOx, mercury, ozone and fine particulate matter would occur if the facilities subject to these referrals installed SCRs (or operated existing SCRs year round) and FGDs within the next 3 or 4 years?

Response. EPA considers the status of individual cases or cases under investigation for possible referral to be enforcement sensitive information. Thus it is EPA's long-standing policy to not comment on specific enforcement sensitive aspects of individual cases.

Question 10. With respect to the proposed new source review rule that was signed on October 13, 2005, please produce all documents (including electronic documents and e-mails) in the Agency's possession related to the proposed rule, that were prepared or dated prior to October 13, 2005, including but not limited to:

(a) drafts of the preamble or inserts for the preamble;

(b) comments on draft rules or preambles;

(c) documents discussing the legislative history or legal authority related to this proposal; and

(d) correspondence or other documents related to the proposed rule that were shown to, given to, or received from people other than Federal employees or contractors.

Response. In response to your request for information on the NSR rule, we have included all non-privileged documents available at this time.

[The referenced documents have been retained in committee's file.]

RESPONSES OF WILLIAM WEHRUM TO ADDITIONAL QUESTIONS FROM SENATOR JEFFORDS

Question 1. In its proposed PM Implementation Rule, EPA has indicated that for States meeting their SO_2 cap under the Clean Air Interstate Rule (CAIR) through reductions at electric generating units (EGUs), then EGUs in that State may comply with the Reasonably Available Control Technology (RACT) obligations of the Clean Air Act by complying with CAIR. Given that CAIR is a cap and trade program, it will clearly not require reductions at all major sources in nonattainment areas and will allow many such sources instead to remain entirely uncontrolled.

Please provide, by State, a list of all major source EGUs in the CAIR region that EPA estimates will not have both a scrubber and a SCR in 2010, 2015 and 2020 under CAIR. Please identify which of these sources are in nonattainment areas. Has

EPA analyzed the difference between applying the CAIR based RACT approach described above and a source specific RACT approach in terms of local air quality in each nonattainment area? Will EPA conduct such an analysis and put it in the record so that each community will be able to see whether their nonattainment status will be better or worse off under the CAIR equals RACT approach?

Response. In the $PM_{2.5}$ implementation rule proposal notice, EPA proposed to find that CAIR satisfies RACT in States that achieve their CAIR reductions solely from EGUs, with the condition that existing selective catalytic reduction (SCR) systems in $PM_{2.5}$ nonattainment areas be run year-round. (Federal Register, Vol. 70, No. 210, November 1, 2005, p. 66024–25.) The notice stated that the CAIR 2009 and 2010 caps would require EGUs to install emission controls on the maximum total capacity on which it is feasible to install controls by those dates, and that imposition of source-specific RACT on EGUs covered by CAIR would not reduce total emissions, but would only impose a higher cost to achieve the same total emission reductions. The notice also observed that a State has authority to conduct its own RACT analysis for any source or to require beyond-RACT controls for attainment.

This question appears to presuppose that RACT for EGUs should be SCR for NOx control and scrubbers for SO_2 control. EPA has not issued guidance indicating that a particular level of SO_2 or NOx control is RACT for EGUs or other sources in $PM_{2.5}$ nonattainment areas. There currently is no established RACT benchmark for EGU control in $PM_{2.5}$ areas to serve as a comparison point with CAIR.

This question also appears to assume that if a coal-fired unit does not have SCR for NOx removal or scrubbers for SO_2 removal, then it would be entirely uncontrolled. Significant reductions in NOx can be achieved through combustion control technology (such as low NOx burners) and significant reductions in SO_2 can be achieved through switching to lower sulfur coal.

The spreadsheet that you have requested is attached and we have also included information regarding NOx emissions and emission rates, SO_2 emissions and emission rates, the size of the unit, and the capacity factor (e.g. how much the unit is projected to operate) of each unit. This information shows that, in general, scrubbers and SCRs are projected to be installed on larger units with higher capacity factors (which would emit significantly more if scrubbers and SCR were not installed), while smaller, less frequently operated units tend to use low NOx burners and low sulfur coal as their compliance choice.

As noted above, EPA designed CAIR to maximize emission reductions that could occur by 2010 given limits to important resources needed to install emission controls such as available boiler-maker labor. Any RACT determination would have to consider whether these resources were available when determining what controls would be appropriate to apply.

EPA has not performed an air quality analysis comparing hypothetical source-specific RACT controls to those projected under CAIR. We have not determined analyses to be performed for the final PM implementation rule.

[The referenced spreadsheet follows.]

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Alabama	COLBERT	COLBERT	Coal Steam	47	5	SCR and Scrubber
2010	Alabama	COLBERT	COLBERT	Coal Steam	47	1	No SCR or Scrubber >25 MW
2010	Alabama	COLBERT	COLBERT	Coal Steam	47	2	No SCR or Scrubber >25 MW
2010	Alabama	COLBERT	COLBERT	Coal Steam	47	3	No SCR or Scrubber >25 MW
2010	Alabama	COLBERT	COLBERT	Coal Steam	47	4	No SCR or Scrubber >25 MW
2010	Alabama	GREENE	GREENE COUNTY	Coal Steam	10	2	SCR
2010	Alabama	GREENE	GREENE COUNTY	Coal Steam	10	1	SCR
2010	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	8	SCR and Scrubber
2010	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	7	SCR and Scrubber
2010	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	6	SCR
2010	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	1	SCR
2010	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	2	SCR
2010	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	3	SCR
2010	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	4	SCR
2010	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	5	SCR
2010	Alabama	JEFFERSON	JAMES H MILLER JR	Coal Steam	6002	1	SCR
2010	Alabama	JEFFERSON	JAMES H MILLER JR	Coal Steam	6002	2	SCR
2010	Alabama	JEFFERSON	JAMES H MILLER JR	Coal Steam	6002	3	SCR
2010	Alabama	JEFFERSON	JAMES H MILLER JR	Coal Steam	6002	4	SCR
2010	Alabama	MOBILE	BARRY	Coal Steam	3	1	No SCR or Scrubber >25 MW
2010	Alabama	MOBILE	BARRY	Coal Steam	3	2	No SCR or Scrubber >25 MW
2010	Alabama	MOBILE	BARRY	Coal Steam	3	3	No SCR or Scrubber >25 MW
2010	Alabama	MOBILE	BARRY	Coal Steam	3	4	No SCR or Scrubber >25 MW
2010	Alabama	MOBILE	BARRY	Coal Steam	3	5	No SCR or Scrubber >25 MW
2010	Alabama	SHELBY	E C GASTON	Coal Steam	26	5	SCR and Scrubber
2010	Alabama	SHELBY	E C GASTON	Coal Steam	26	1	SCR
2010	Alabama	SHELBY	E C GASTON	Coal Steam	26	4	SCR
2010	Alabama	SHELBY	E C GASTON	Coal Steam	26	2	SCR
2010	Alabama	SHELBY	E C GASTON	Coal Steam	26	3	SCR
2010	Alabama	WALKER	GORGAS	Coal Steam	8	10	SCR and Scrubber
2010	Alabama	WALKER	GORGAS	Coal Steam	8	6	SCR
2010	Alabama	WALKER	GORGAS	Coal Steam	8	7	SCR
2010	Alabama	WALKER	GORGAS	Coal Steam	8	8	SCR
2010	Alabama	WALKER	GORGAS	Coal Steam	8	9	SCR
2010	Alabama	WASHINGTON	CHARLES R LOWMAN	Coal Steam	56	3	SCR and Scrubber
2010	Alabama	WASHINGTON	CHARLES R LOWMAN	Coal Steam	56	2	SCR and Scrubber
2010	Alabama	WASHINGTON	CHARLES R LOWMAN	Coal Steam	56	1	No SCR or Scrubber >25 MW
2010	Arkansas	BENTON	FLINT CREEK	Coal Steam	6138	1	No SCR or Scrubber >25 MW
2010	Arkansas	INDEPENDENCE	INDEPENDENCE	Coal Steam	6641	1	No SCR or Scrubber >25 MW
2010	Arkansas	INDEPENDENCE	INDEPENDENCE	Coal Steam	6641	2	No SCR or Scrubber >25 MW
2010	Arkansas	JEFFERSON	WHITE BLUFF	Coal Steam	6009	1	No SCR or Scrubber >25 MW
2010	Arkansas	JEFFERSON	WHITE BLUFF	Coal Steam	6009	2	No SCR or Scrubber >25 MW
2010	Connecticut	FAIRFIELD	BRIDGEPORT HARBOR	Coal Steam	568	BHB3	Scrubber
2010	Connecticut	NEW LONDON	AES Thames Incorporated	Coal Steam	10675	GEN1	Scrubber
2010	Delaware	NEW CASTLE	EDGE MOOR	Coal Steam	593	3	No SCR or Scrubber >25 MW
2010	Delaware	NEW CASTLE	EDGE MOOR	Coal Steam	593	4	No SCR or Scrubber >25 MW
2010	Delaware	SUSSEX	INDIAN RIVER	Coal Steam	594	1	No SCR or Scrubber >25 MW
2010	Delaware	SUSSEX	INDIAN RIVER	Coal Steam	594	2	No SCR or Scrubber >25 MW
2010	Delaware	SUSSEX	INDIAN RIVER	Coal Steam	594	3	No SCR or Scrubber >25 MW
2010	Delaware	SUSSEX	INDIAN RIVER	Coal Steam	594	4	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
36.78	1.10	4.60	451.3	0.93	0.06	0.25		
13.22	2.90	6.61	178.0	0.85	0.44	1.00		
13.16	2.89	6.58	178.0	0.84	0.44	1.00		
13.19	2.90	6.60	178.0	0.85	0.44	1.00		
13.14	2.88	6.57	176.0	0.84	0.44	1.00		
19.22	0.48	10.57	255.0	0.86	0.05	1.10		
18.91	0.81	10.40	262.0	0.82	0.09	1.10		
35.80	1.07	6.71	467.0	0.88	0.06	0.37	X	X
38.08	1.14	10.19	477.0	0.91	0.06	0.54	X	X
8.45	0.27	4.22	111.0	0.87	0.06	1.00	X	X
8.95	0.29	4.47	111.0	0.92	0.06	1.00	X	X
8.58	0.15	4.29	111.0	0.88	0.04	1.00	X	X
8.96	0.29	4.48	111.0	0.92	0.06	1.00	X	X
8.98	0.29	4.49	111.0	0.92	0.06	1.00	X	X
8.74	0.28	4.37	111.0	0.90	0.06	1.00	X	X
54.53	4.67	12.84	699.0	0.89	0.17	0.47	X	X
54.50	4.29	12.84	699.0	0.89	0.16	0.47	X	X
53.34	4.25	12.56	701.0	0.87	0.16	0.47	X	X
52.48	4.30	12.36	701.0	0.85	0.16	0.47	X	X
10.29	1.78	5.15	138.0	0.85	0.35	1.00		
10.47	1.81	5.24	139.0	0.86	0.35	1.00		
18.66	3.22	9.33	251.0	0.85	0.35	1.00		
26.15	2.58	13.07	362.0	0.82	0.20	1.00		
54.34	10.11	27.17	768.0	0.81	0.37	1.00		
60.34	1.81	6.46	842.9	0.82	0.06	0.21	X	X
17.67	0.56	10.58	254.0	0.79	0.06	1.20	X	X
18.75	0.54	11.22	256.0	0.84	0.06	1.20	X	X
18.77	0.59	11.24	259.0	0.83	0.06	1.20	X	X
18.84	0.54	11.27	260.0	0.83	0.06	1.20	X	X
51.63	1.55	5.82	707.8	0.83	0.06	0.23	X	X
9.48	0.31	5.77	110.0	0.96	0.07	1.22	X	X
9.20	0.30	5.60	111.0	0.95	0.07	1.22	X	X
12.57	0.31	6.91	167.0	0.86	0.05	1.10	X	X
13.72	0.32	7.54	177.0	0.88	0.05	1.10	X	X
20.37	0.60	7.28	235.0	0.96	0.06	0.71		
20.64	0.63	7.38	237.0	0.96	0.06	0.71		
2.17	0.45	1.08	80.0	0.31	0.41	1.00		
35.89	3.55	10.14	480.0	0.85	0.20	0.56		
66.11	7.33	17.82	836.0	0.90	0.22	0.54		
69.91	9.96	18.84	842.0	0.95	0.28	0.54		
65.44	4.81	17.64	815.0	0.92	0.15	0.54		
66.73	4.44	17.98	844.0	0.90	0.13	0.54		
28.17	2.11	2.11	377.4	0.85	0.15	0.15	X	
15.48	0.46	1.79	195.0	0.91	0.06	0.23		
5.95	0.51	4.46	84.0	0.81	0.17	1.50	X	
11.68	0.99	8.76	167.0	0.80	0.17	1.50	X	
6.39	1.20	3.51	89.0	0.82	0.37	1.10		
6.76	1.15	3.72	89.0	0.87	0.34	1.10		
11.61	1.07	6.39	162.0	0.82	0.19	1.10		
28.74	3.18	15.81	403.0	0.81	0.22	1.10		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Florida	ALACHUA	DEERHAVEN	Coal Steam	663	B2	No SCR or Scrubber >25 MW
2010	Florida	BAY	SMITH	Coal Steam	643	1	No SCR or Scrubber >25 MW
2010	Florida	BAY	SMITH	Coal Steam	643	2	No SCR or Scrubber >25 MW
2010	Florida	CITRUS	CRYSTAL RIVER	Coal Steam	628	4	SCR and Scrubber
2010	Florida	CITRUS	CRYSTAL RIVER	Coal Steam	628	1	No SCR or Scrubber >25 MW
2010	Florida	CITRUS	CRYSTAL RIVER	Coal Steam	628	2	No SCR or Scrubber >25 MW
2010	Florida	CITRUS	CRYSTAL RIVER	Coal Steam	628	5	No SCR or Scrubber >25 MW
2010	Florida	DUVAL	Cedar Bay Generating Company L P	Coal Steam	10672	GEN1	Scrubber
2010	Florida	DUVAL	ST JOHNS RIVER POWER	Coal Steam	207	1	SCR and Scrubber
2010	Florida	DUVAL	ST JOHNS RIVER POWER	Coal Steam	207	2	SCR and Scrubber
2010	Florida	ESCAMBIA	CRIST	Coal Steam	641	7	SCR
2010	Florida	ESCAMBIA	CRIST	Coal Steam	641	4	No SCR or Scrubber >25 MW
2010	Florida	ESCAMBIA	CRIST	Coal Steam	641	5	No SCR or Scrubber >25 MW
2010	Florida	ESCAMBIA	CRIST	Coal Steam	641	6	No SCR or Scrubber >25 MW
2010	Florida	HERNANDO	Central Power and Lime Incorporated	Coal Steam	10333	GEN1	Scrubber
2010	Florida	HILLSBOROUGH	BIG BEND	Coal Steam	645	BB01	SCR and Scrubber
2010	Florida	HILLSBOROUGH	BIG BEND	Coal Steam	645	BB02	SCR and Scrubber
2010	Florida	HILLSBOROUGH	BIG BEND	Coal Steam	645	BB03	SCR and Scrubber
2010	Florida	HILLSBOROUGH	BIG BEND	Coal Steam	645	BB04	SCR and Scrubber
2010	Florida	JACKSON	SCHOLZ	Coal Steam	642	1	No SCR or Scrubber >25 MW
2010	Florida	JACKSON	SCHOLZ	Coal Steam	642	2	No SCR or Scrubber >25 MW
2010	Florida	MARTIN	Indiantown Cogeneration Facility	Coal Steam	50976	GEN1	SCR and Scrubber
2010	Florida	ORANGE	STANTON ENERGY	Coal Steam	564	2	SCR and Scrubber
2010	Florida	ORANGE	STANTON ENERGY	Coal Steam	564	1	SCR and Scrubber
2010	Florida	POLK	C D MCINTOSH JR	Coal Steam	676	3	SCR and Scrubber
2010	Florida	PUTNAM	SEMINOLE	Coal Steam	136	1	SCR and Scrubber
2010	Florida	PUTNAM	SEMINOLE	Coal Steam	136	2	SCR and Scrubber
2010	Georgia	BARTOW	BOWEN	Coal Steam	703	2BLR	SCR and Scrubber
2010	Georgia	BARTOW	BOWEN	Coal Steam	703	3BLR	SCR and Scrubber
2010	Georgia	BARTOW	BOWEN	Coal Steam	703	4BLR	SCR and Scrubber
2010	Georgia	BARTOW	BOWEN	Coal Steam	703	1BLR	SCR
2010	Georgia	CHATHAM	KRAFT	Coal Steam	733	1	No SCR or Scrubber >25 MW
2010	Georgia	CHATHAM	KRAFT	Coal Steam	733	2	No SCR or Scrubber >25 MW
2010	Georgia	CHATHAM	KRAFT	Coal Steam	733	3	No SCR or Scrubber >25 MW
2010	Georgia	COBB	JACK MCDONOUGH	Coal Steam	710	MB1	No SCR or Scrubber >25 MW
2010	Georgia	COBB	JACK MCDONOUGH	Coal Steam	710	MB2	No SCR or Scrubber >25 MW
2010	Georgia	COWETA	YATES	Coal Steam	728	Y1BR	Scrubber
2010	Georgia	COWETA	YATES	Coal Steam	728	Y2BR	No SCR or Scrubber >25 MW
2010	Georgia	COWETA	YATES	Coal Steam	728	Y3BR	No SCR or Scrubber >25 MW
2010	Georgia	COWETA	YATES	Coal Steam	728	Y4BR	No SCR or Scrubber >25 MW
2010	Georgia	COWETA	YATES	Coal Steam	728	Y5BR	No SCR or Scrubber >25 MW
2010	Georgia	COWETA	YATES	Coal Steam	728	Y6BR	No SCR or Scrubber >25 MW
2010	Georgia	COWETA	YATES	Coal Steam	728	Y7BR	No SCR or Scrubber >25 MW
2010	Georgia	DOUGHERTY	MITCHELL	Coal Steam	727	3	No SCR or Scrubber >25 MW
2010	Georgia	EFFINGHAM	MCINTOSH	Coal Steam	6124	1	No SCR or Scrubber >25 MW
2010	Georgia	EFFINGHAM	Savannah River Mill	Coal Steam	10361	GEN3	No SCR or Scrubber <=25 MW
2010	Georgia	EFFINGHAM	Savannah River Mill	Coal Steam	10361	GEN4	No SCR or Scrubber <=25 MW
2010	Georgia	FLOYD	HAMMOND	Coal Steam	708	4	SCR
2010	Georgia	FLOYD	HAMMOND	Coal Steam	708	1	No SCR or Scrubber >25 MW
2010	Georgia	FLOYD	HAMMOND	Coal Steam	708	2	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
17.71	2.83	8.86	218.0	0.93	0.32	1.00		
12.23	2.15	6.12	162.0	0.86	0.35	1.00		
14.20	2.52	7.10	189.0	0.86	0.35	1.00		
48.96	1.47	6.12	682.4	0.82	0.06	0.25		
27.07	3.58	13.54	369.0	0.84	0.26	1.00		
30.48	3.66	15.24	464.0	0.75	0.24	1.00		
48.58	8.94	24.29	697.0	0.80	0.37	1.00		
19.69	1.23	3.94	248.0	0.91	0.13	0.40		
38.57	1.05	6.75	624.0	0.71	0.05	0.35		
48.66	1.40	8.51	624.0	0.89	0.06	0.35		
37.20	1.12	18.60	477.0	0.89	0.06	1.00		
6.08	0.53	3.04	78.0	0.89	0.17	1.00		
6.32	0.73	3.16	80.0	0.90	0.23	1.00		
24.84	6.02	12.42	302.0	0.94	0.49	1.00		
8.81	1.41	2.97	111.0	0.91	0.32	0.67		
31.35	0.97	3.92	421.0	0.85	0.06	0.25		
30.24	0.94	3.78	421.0	0.82	0.06	0.25		
31.45	0.94	4.88	430.0	0.83	0.06	0.31		
31.76	0.95	4.92	439.0	0.83	0.06	0.31		
4.52	0.62	2.26	49.0	0.96	0.27	1.00		
4.52	0.62	2.26	49.0	0.96	0.27	1.00		
23.34	0.70	6.77	294.0	0.91	0.06	0.58		
37.72	1.13	4.72	441.0	0.96	0.06	0.25		
31.48	0.79	5.51	441.0	0.81	0.05	0.35		
25.19	0.70	4.41	333.0	0.86	0.06	0.35		
44.45	1.52	7.78	625.0	0.81	0.07	0.35		
42.68	1.48	7.47	625.0	0.78	0.07	0.35		
56.00	1.75	11.95	707.3	0.90	0.06	0.43	X	
70.35	2.20	15.02	888.6	0.90	0.06	0.43	X	
72.45	2.38	15.47	915.2	0.90	0.07	0.43	X	
55.62	1.59	37.21	713.0	0.89	0.06	1.34	X	
1.26	0.15	0.81	48.0	0.30	0.24	1.29		
1.28	0.15	0.83	52.0	0.28	0.24	1.29		
6.92	0.83	4.72	102.0	0.77	0.24	1.37		
18.48	2.51	12.05	258.0	0.82	0.27	1.30	X	X
19.03	2.59	12.41	259.0	0.84	0.27	1.30	X	X
8.84	1.72	0.49	99.0	0.96	0.39	0.11	X	X
7.52	1.64	5.14	105.0	0.82	0.44	1.37	X	X
8.31	1.81	5.67	112.0	0.85	0.44	1.37	X	X
10.38	1.86	6.77	135.0	0.88	0.38	1.30	X	X
10.61	1.90	6.92	137.0	0.88	0.36	1.30	X	X
26.14	3.47	14.38	352.0	0.85	0.27	1.10	X	X
26.40	3.39	14.52	355.0	0.85	0.26	1.10	X	X
10.46	1.38	7.14	153.0	0.78	0.26	1.37		
10.68	1.90	5.88	155.0	0.79	0.36	1.10		
0.03	0.01	0.04	0.5	0.76	0.48	2.20		
0.03	0.01	0.04	0.5	0.76	0.48	2.20		
39.79	1.27	26.62	510.0	0.89	0.06	1.34	X	X
8.58	1.95	5.60	112.0	0.87	0.45	1.30	X	X
8.63	1.96	5.63	112.0	0.88	0.45	1.30	X	X

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Georgia	FLOYD	HAMMOND	Coal Steam	708	3	No SCR or Scrubber >25 MW
2010	Georgia	HEARD	WANSLEY	Coal Steam	6052	1	SCR and Scrubber
2010	Georgia	HEARD	WANSLEY	Coal Steam	6052	2	SCR and Scrubber
2010	Georgia	MONROE	SCHERER	Coal Steam	6257	1	No SCR or Scrubber >25 MW
2010	Georgia	MONROE	SCHERER	Coal Steam	6257	4	No SCR or Scrubber >25 MW
2010	Georgia	MONROE	SCHERER	Coal Steam	6257	2	No SCR or Scrubber >25 MW
2010	Georgia	MONROE	SCHERER	Coal Steam	6257	3	No SCR or Scrubber >25 MW
2010	Georgia	PUTNAM	HARLLEE BRANCH	Coal Steam	709	1	No SCR or Scrubber >25 MW
2010	Georgia	PUTNAM	HARLLEE BRANCH	Coal Steam	709	2	No SCR or Scrubber >25 MW
2010	Georgia	PUTNAM	HARLLEE BRANCH	Coal Steam	709	4	No SCR or Scrubber >25 MW
2010	Georgia	PUTNAM	HARLLEE BRANCH	Coal Steam	709	3	No SCR or Scrubber >25 MW
2010	Illinois	CHRISTIAN	KINCAID	Coal Steam	876	1	SCR
2010	Illinois	CHRISTIAN	KINCAID	Coal Steam	876	2	SCR
2010	Illinois	COOK	CRAWFORD	Coal Steam	867	7	No SCR or Scrubber >25 MW
2010	Illinois	COOK	FISK	Coal Steam	886	19	No SCR or Scrubber >25 MW
2010	Illinois	COOK	CRAWFORD	Coal Steam	867	8	No SCR or Scrubber >25 MW
2010	Illinois	FULTON	DUCK CREEK	Coal Steam	6016	1	SCR and Scrubber
2010	Illinois	JASPER	NEWTON	Coal Steam	6017	1	Scrubber
2010	Illinois	JASPER	NEWTON	Coal Steam	6017	2	No SCR or Scrubber >25 MW
2010	Illinois	LAKE	WAUKEGAN	Coal Steam	883	17	SCR
2010	Illinois	LAKE	WAUKEGAN	Coal Steam	883	8	No SCR or Scrubber >25 MW
2010	Illinois	LAKE	WAUKEGAN	Coal Steam	883	7	No SCR or Scrubber >25 MW
2010	Illinois	MADISON	WOOD RIVER	Coal Steam	898	4	No SCR or Scrubber >25 MW
2010	Illinois	MADISON	WOOD RIVER	Coal Steam	898	5	No SCR or Scrubber >25 MW
2010	Illinois	MASON	HAVANA	Coal Steam	891	9	SCR
2010	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	1	No SCR or Scrubber >25 MW
2010	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	2	No SCR or Scrubber >25 MW
2010	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	3	No SCR or Scrubber >25 MW
2010	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	4	No SCR or Scrubber >25 MW
2010	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	5	No SCR or Scrubber >25 MW
2010	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	6	No SCR or Scrubber >25 MW
2010	Illinois	MONTGOMERY	COFFEEN	Coal Steam	861	01	SCR and Scrubber
2010	Illinois	MONTGOMERY	COFFEEN	Coal Steam	861	02	SCR and Scrubber
2010	Illinois	MORGAN	MEREDOSIA	Coal Steam	864	05	SCR and Scrubber
2010	Illinois	PEORIA	E D EDWARDS	Coal Steam	856	1	SCR and Scrubber
2010	Illinois	PEORIA	E D EDWARDS	Coal Steam	856	2	SCR and Scrubber
2010	Illinois	PEORIA	E D EDWARDS	Coal Steam	856	3	SCR and Scrubber
2010	Illinois	PIKE	PEARL STATION	Coal Steam	6238	1A	No SCR or Scrubber <=25 MW
2010	Illinois	PUTNAM	HENNEPIN	Coal Steam	892	2	Scrubber
2010	Illinois	RANDOLPH	BALDWIN	Coal Steam	889	1	SCR
2010	Illinois	RANDOLPH	BALDWIN	Coal Steam	889	2	SCR
2010	Illinois	RANDOLPH	BALDWIN	Coal Steam	889	3	No SCR or Scrubber >25 MW
2010	Illinois	SANGAMON	DALLMAN	Coal Steam	963	32	SCR and Scrubbar
2010	Illinois	SANGAMON	DALLMAN	Coal Steam	963	31	SCR and Scrubber
2010	Illinois	SANGAMON	DALLMAN	Coal Steam	963	33	SCR and Scrubber
2010	Illinois	TAZEWELL	POWERTON	Coal Steam	879	52	SCR
2010	Illinois	TAZEWELL	POWERTON	Coal Steam	879	61	SCR
2010	Illinois	TAZEWELL	POWERTON	Coal Steam	879	62	SCR
2010	Illinois	TAZEWELL	POWERTON	Coal Steam	879	51	SCR
2010	Illinois	WILL	WILL COUNTY	Coal Steam	884	2	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
8.54	1.94	5.57	112.0	0.87	0.45	1.30	X	X
69.49	1.92	14.83	877.7	0.90	0.06	0.43	X	X
69.57	1.89	14.85	878.7	0.90	0.05	0.43	X	X
63.44	9.15	26.26	849.1	0.85	0.29	0.83	X	X
64.29	6.22	26.62	849.8	0.86	0.19	0.83	X	X
62.98	8.65	26.07	856.1	0.84	0.27	0.83	X	X
66.99	5.13	27.74	875.1	0.87	0.15	0.83	X	X
19.75	5.16	12.88	266.0	0.85	0.52	1.30	X	X
23.91	6.25	15.59	325.0	0.84	0.52	1.30	X	X
36.18	9.00	23.59	507.0	0.81	0.50	1.30	X	X
37.00	9.20	24.12	509.0	0.83	0.50	1.30	X	X
39.08	1.65	9.36	554.0	0.81	0.08	0.48		
37.89	1.60	9.07	554.0	0.78	0.08	0.48		
16.85	1.62	4.39	213.0	0.90	0.19	0.52	X	X
23.62	2.68	5.83	316.0	0.85	0.23	0.49	X	X
24.48	2.47	6.38	319.0	0.88	0.20	0.52	X	X
27.46	0.82	5.77	366.0	0.86	0.06	0.42		
45.01	3.09	2.70	543.4	0.95	0.14	0.12		
42.65	2.39	9.49	555.0	0.88	0.11	0.45		
7.84	0.24	1.78	100.0	0.89	0.06	0.45	X	X
22.58	1.62	5.58	297.0	0.87	0.14	0.49	X	X
25.35	1.75	6.07	328.0	0.88	0.14	0.48	X	X
7.61	0.58	1.81	96.0	0.90	0.15	0.48	X	X
27.71	2.13	6.36	372.0	0.85	0.15	0.46	X	X
30.99	0.93	15.50	428.0	0.83	0.06	1.00		
13.01	0.85	3.35	169.0	0.88	0.13	0.51		
12.93	0.84	3.33	169.0	0.87	0.13	0.51		
13.04	0.88	3.36	169.0	0.88	0.13	0.51		
13.04	0.88	3.36	169.0	0.88	0.13	0.51		
13.07	0.86	3.37	169.0	0.88	0.13	0.51		
12.99	0.85	3.34	169.0	0.88	0.13	0.51		
26.52	0.93	1.59	332.9	0.91	0.07	0.12		
43.55	1.52	2.61	548.2	0.91	0.07	0.12		
17.15	0.51	1.03	210.5	0.93	0.06	0.12		
4.09	0.12	0.25	116.1	0.40	0.06	0.12		
8.61	0.26	0.52	259.9	0.38	0.06	0.12		
27.74	0.83	1.66	353.4	0.90	0.06	0.12		
2.10	0.47	4.62	22.0	0.96	0.45	4.40		
17.75	1.15	1.07	210.5	0.96	0.13	0.12		
44.17	1.33	8.83	575.0	0.88	0.06	0.40	X	X
41.76	1.24	10.00	581.0	0.82	0.06	0.48	X	X
46.10	2.70	9.86	595.0	0.88	0.12	0.43	X	X
7.72	0.36	0.87	86.0	0.96	0.09	0.23		
7.96	0.37	0.90	88.0	0.96	0.09	0.22		
15.54	0.47	1.94	190.0	0.93	0.06	0.25		
26.45	0.79	5.73	347.9	0.87	0.06	0.43		
26.51	0.80	5.74	348.6	0.87	0.06	0.43		
26.72	0.80	5.78	351.4	0.87	0.06	0.43		
26.77	0.80	5.80	352.1	0.87	0.06	0.43		
9.51	2.33	2.08	148.0	0.73	0.49	0.44	X	X

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Illinois	WILL	WILL COUNTY	Coal Steam	884	1	No SCR or Scrubber >25 MW
2010	Illinois	WILL	JOLIET 29	Coal Steam	384	72	No SCR or Scrubber >25 MW
2010	Illinois	WILL	WILL COUNTY	Coal Steam	884	3	No SCR or Scrubber >25 MW
2010	Illinois	WILL	JOLIET 29	Coal Steam	384	81	No SCR or Scrubber >25 MW
2010	Illinois	WILL	JOLIET 29	Coal Steam	384	82	No SCR or Scrubber >25 MW
2010	Illinois	WILL	JOLIET 29	Coal Steam	384	71	No SCR or Scrubber >25 MW
2010	Illinois	WILL	JOLIET 9	Coal Steam	874	5	No SCR or Scrubber >25 MW
2010	Illinois	WILL	WILL COUNTY	Coal Steam	884	4	No SCR or Scrubber >25 MW
2010	Illinois	WILLIAMSON	MARION	Coal Steam	976	4	SCR and Scrubber
2010	Illinois		MANO_IL_Coal Steam	Coal Steam	0	041	SCR and Scrubber
2010	Indiana	CASS	LOGANSPORT	Coal Steam	1032	5	No SCR or Scrubber >25 MW
2010	Indiana	CASS	LOGANSPORT	Coal Steam	1032	6	No SCR or Scrubber >25 MW
2010	Indiana	DEARBORN	TANNERS CREEK	Coal Steam	988	U1	SCR
2010	Indiana	DEARBORN	TANNERS CREEK	Coal Steam	988	U2	SCR
2010	Indiana	DEARBORN	TANNERS CREEK	Coal Steam	988	U3	SCR
2010	Indiana	DEARBORN	TANNERS CREEK	Coal Steam	988	U4	No SCR or Scrubber >25 MW
2010	Indiana	DUBOIS	JASPER 2	Coal Steam	6225	1	No SCR or Scrubber <=25 MW
2010	Indiana	FLOYD	R GALLAGHER	Coal Steam	1008	4	No SCR or Scrubber >25 MW
2010	Indiana	FLOYD	R GALLAGHER	Coal Steam	1008	1	No SCR or Scrubber >25 MW
2010	Indiana	FLOYD	R GALLAGHER	Coal Steam	1008	2	No SCR or Scrubber >25 MW
2010	Indiana	FLOYD	R GALLAGHER	Coal Steam	1008	3	No SCR or Scrubber >25 MW
2010	Indiana	GIBSON	GIBSON	Coal Steam	6113	1	SCR and Scrubber
2010	Indiana	GIBSON	GIBSON	Coal Steam	6113	2	SCR and Scrubber
2010	Indiana	GIBSON	GIBSON	Coal Steam	6113	3	SCR and Scrubber
2010	Indiana	GIBSON	GIBSON	Coal Steam	6113	5	SCR and Scrubber
2010	Indiana	GIBSON	GIBSON	Coal Steam	6113	4	SCR and Scrubber
2010	Indiana	JASPER	R M SCHAHFER	Coal Steam	6085	17	Scrubber
2010	Indiana	JASPER	R M SCHAHFER	Coal Steam	6085	18	Scrubber
2010	Indiana	JASPER	R M SCHAHFER	Coal Steam	6085	14	SCR
2010	Indiana	JASPER	R M SCHAHFER	Coal Steam	6085	15	No SCR or Scrubber >25 MW
2010	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	6	SCR
2010	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	4	SCR
2010	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	1	SCR
2010	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	3	SCR
2010	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	2	SCR
2010	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	5	SCR
2010	Indiana	LA PORTE	MICHIGAN CITY	Coal Steam	997	12	SCR
2010	Indiana	LAKE	STATE LINE	Coal Steam	981	4	SCR
2010	Indiana	LAKE	DEAN H MITCHELL	Coal Steam	996	11	No SCR or Scrubber >25 MW
2010	Indiana	LAKE	DEAN H MITCHELL	Coal Steam	996	4	No SCR or Scrubber >25 MW
2010	Indiana	LAKE	DEAN H MITCHELL	Coal Steam	996	5	No SCR or Scrubber >25 MW
2010	Indiana	LAKE	DEAN H MITCHELL	Coal Steam	996	6	No SCR or Scrubber >25 MW
2010	Indiana	LAKE	STATE LINE	Coal Steam	981	3	No SCR or Scrubber >25 MW
2010	Indiana	MARION	ELMER W STOUT	Coal Steam	990	50	No SCR or Scrubber >25 MW
2010	Indiana	MARION	ELMER W STOUT	Coal Steam	990	60	No SCR or Scrubber >25 MW
2010	Indiana	MARION	ELMER W STOUT	Coal Steam	990	70	No SCR or Scrubber >25 MW
2010	Indiana	MARION	PERRY K	Coal Steam	992	11	No SCR or Scrubber <=25 MW
2010	Indiana	MARION	PERRY K	Coal Steam	992	12	No SCR or Scrubber <=25 MW
2010	Indiana	MARION	PERRY K	Coal Steam	992	13	No SCR or Scrubber <=25 MW
2010	Indiana	MARION	PERRY K	Coal Steam	992	14	No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
9.50	2.33	2.08	151.0	0.72	0.49	0.44	X	X
16.60	0.98	5.83	224.1	0.85	0.12	0.68	X	X
19.82	1.73	4.80	251.0	0.90	0.17	0.48	X	X
18.85	1.22	6.39	254.4	0.85	0.13	0.68	X	X
19.53	1.26	6.62	263.6	0.85	0.13	0.68	X	X
20.37	1.21	6.90	274.9	0.85	0.12	0.68	X	X
18.37	3.16	5.98	292.0	0.72	0.34	0.65	X	X
38.79	2.95	9.58	510.0	0.87	0.15	0.49	X	X
15.83	0.63	3.56	170.0	0.96	0.08	0.45		
32.35	0.97	8.81	500.0	0.74	0.06	0.54		
1.62	0.37	4.05	16.7	0.96	0.45	5.00		
1.78	0.40	4.45	22.3	0.91	0.45	5.00		
10.78	0.34	5.39	140.0	0.88	0.06	1.00	X	X
10.67	0.34	5.34	140.0	0.87	0.06	1.00	X	X
14.78	0.47	7.39	200.0	0.84	0.06	1.00	X	X
37.02	6.61	18.51	500.0	0.85	0.36	1.00	X	X
1.09	0.24	2.72	13.6	0.91	0.45	5.00	X	
9.36	1.85	4.68	140.0	0.76	0.39	1.00	X	X
9.91	1.98	4.95	140.0	0.81	0.40	1.00	X	X
9.91	1.98	4.95	140.0	0.81	0.40	1.00	X	X
9.36	1.85	4.68	140.0	0.76	0.39	1.00	X	X
49.13	1.51	6.14	616.8	0.91	0.06	0.25	X	
49.13	1.51	6.14	616.8	0.91	0.06	0.25	X	
49.13	1.41	6.14	616.8	0.91	0.06	0.25	X	
48.27	1.45	8.14	619.0	0.89	0.06	0.34	X	
48.53	1.46	8.49	622.0	0.89	0.06	0.35	X	
30.56	4.60	4.81	361.0	0.96	0.30	0.32		
29.11	3.71	4.59	361.0	0.92	0.25	0.32		
38.24	1.15	12.16	431.0	0.96	0.06	0.64		
39.82	4.66	11.61	472.0	0.96	0.23	0.58		
15.71	0.55	7.86	203.0	0.88	0.07	1.00	X	X
16.07	0.63	8.04	205.0	0.89	0.08	1.00	X	X
16.15	0.61	8.08	206.0	0.89	0.08	1.00	X	X
16.23	0.62	8.11	207.0	0.89	0.08	1.00	X	X
16.31	0.62	8.15	208.0	0.89	0.08	1.00	X	X
17.09	0.67	8.55	218.0	0.89	0.08	1.00	X	X
37.24	1.25	11.99	469.0	0.91	0.07	0.64		
21.55	0.70	5.22	303.0	0.81	0.06	0.48	X	X
8.13	1.68	4.07	110.0	0.84	0.41	1.00	X	X
9.02	1.08	4.51	125.0	0.82	0.24	1.00	X	X
8.91	0.65	4.46	125.0	0.81	0.15	1.00	X	X
9.20	1.21	4.60	125.0	0.84	0.26	1.00	X	X
14.62	1.68	4.34	187.0	0.89	0.23	0.59	X	X
7.11	1.26	3.55	106.0	0.77	0.35	1.00	X	X
7.09	1.22	3.54	106.0	0.76	0.34	1.00	X	X
28.57	4.79	14.28	422.0	0.77	0.34	1.00	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Indiana	MARION	PERRY K	Coal Steam	992	15	No SCR or Scrubber <=25 MW
2010	Indiana	MARION	PERRY K	Coal Steam	992	16	No SCR or Scrubber <=25 MW
2010	Indiana	MIAMI	PERU	Coal Steam	1037	5	No SCR or Scrubber <=25 MW
2010	Indiana	MIAMI	PERU	Coal Steam	1037	2	No SCR or Scrubber <=25 MW
2010	Indiana	MONTGOMERY	CRAWFORDSVILLE	Coal Steam	1024	5	No SCR or Scrubber <=25 MW
2010	Indiana	MONTGOMERY	CRAWFORDSVILLE	Coal Steam	1024	6	No SCR or Scrubber <=25 MW
2010	Indiana	MORGAN	H T PRITCHARD	Coal Steam	991	3	No SCR or Scrubber >25 MW
2010	Indiana	MORGAN	H T PRITCHARD	Coal Steam	991	4	No SCR or Scrubber >25 MW
2010	Indiana	MORGAN	H T PRITCHARD	Coal Steam	991	5	No SCR or Scrubber >25 MW
2010	Indiana	MORGAN	H T PRITCHARD	Coal Steam	991	6	No SCR or Scrubber >25 MW
2010	Indiana	PIKE	PETERSBURG	Coal Steam	994	1	Scrubber
2010	Indiana	PIKE	PETERSBURG	Coal Steam	994	2	Scrubber
2010	Indiana	PIKE	PETERSBURG	Coal Steam	994	3	Scrubber
2010	Indiana	PIKE	PETERSBURG	Coal Steam	994	4	Scrubber
2010	Indiana	PIKE	FRANK E RATTS	Coal Steam	1043	2SG1	No SCR or Scrubber >25 MW
2010	Indiana	PIKE	FRANK E RATTS	Coal Steam	1043	1SG1	No SCR or Scrubber >25 MW
2010	Indiana	PORTER	BAILLY	Coal Steam	995	7	SCR and Scrubber
2010	Indiana	PORTER	BAILLY	Coal Steam	995	8	SCR and Scrubber
2010	Indiana	POSEY	A B BROWN	Coal Steam	6137	1	SCR and Scrubber
2010	Indiana	POSEY	A B BROWN	Coal Steam	6137	2	SCR and Scrubber
2010	Indiana	SPENCER	ROCKPORT	Coal Steam	6166	MB1	SCR
2010	Indiana	SPENCER	ROCKPORT	Coal Steam	6166	MB2	SCR
2010	Indiana	SULLIVAN	MEROM	Coal Steam	6213	2SG1	SCR and Scrubber
2010	Indiana	SULLIVAN	MEROM	Coal Steam	6213	1SG1	SCR and Scrubber
2010	Indiana	VERMILLION	CAYUGA	Coal Steam	1001	2	No SCR or Scrubber >25 MW
2010	Indiana	VERMILLION	CAYUGA	Coal Steam	1001	1	No SCR or Scrubber >25 MW
2010	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	2	No SCR or Scrubber >25 MW
2010	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	4	No SCR or Scrubber >25 MW
2010	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	3	No SCR or Scrubber >25 MW
2010	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	5	No SCR or Scrubber >25 MW
2010	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	6	No SCR or Scrubber >25 MW
2010	Indiana	WARRICK	F B CULLEY	Coal Steam	1012	2	Scrubber
2010	Indiana	WARRICK	F B CULLEY	Coal Steam	1012	3	SCR and Scrubber
2010	Indiana	WARRICK	WARRICK	Coal Steam	6705	4	No SCR or Scrubber >25 MW
2010	Indiana	WAYNE	WHITEWATER VALLEY	Coal Steam	1040	2	No SCR or Scrubber >25 MW
2010	Iowa	ALLAMAKEE	LANSING	Coal Steam	1047	4	No SCR or Scrubber >25 MW
2010	Iowa	ALLAMAKEE	LANSING	Coal Steam	1047	2	No SCR or Scrubber <=25 MW
2010	Iowa	ALLAMAKEE	LANSING	Coal Steam	1047	1	No SCR or Scrubber <=25 MW
2010	Iowa	BLACK HAWK	STREETER STATION	Coal Steam	1131	7	No SCR or Scrubber >25 MW
2010	Iowa	CLINTON	MILTON L KAPP	Coal Steam	1048	2	No SCR or Scrubber >25 MW
2010	Iowa	DES MOINES	BURLINGTON	Coal Steam	1104	1	No SCR or Scrubber >25 MW
2010	Iowa	DUBUQUE	DUBUQUE	Coal Steam	1046	5	No SCR or Scrubber >25 MW
2010	Iowa	DUBUQUE	DUBUQUE	Coal Steam	1046	1	No SCR or Scrubber >25 MW
2010	Iowa	LINN	PRAIRIE CREEK	Coal Steam	1073	1	No SCR or Scrubber >25 MW
2010	Iowa	LINN	PRAIRIE CREEK	Coal Steam	1073	2	No SCR or Scrubber >25 MW
2010	Iowa	LINN	SIXTH STREET	Coal Steam	1058	2	No SCR or Scrubber >25 MW
2010	Iowa	LINN	SIXTH STREET	Coal Steam	1058	3	No SCR or Scrubber >25 MW
2010	Iowa	LINN	SIXTH STREET	Coal Steam	1058	4	No SCR or Scrubber >25 MW
2010	Iowa	LINN	SIXTH STREET	Coal Steam	1058	5	No SCR or Scrubber >25 MW
2010	Iowa	LINN	PRAIRIE CREEK	Coal Steam	1073	3	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
1.04	0.23	2.59	12.3	0.96	0.45	5.00		
1.92	0.43	4.80	20.0	0.96	0.45	5.00		
0.98	0.22	2.46	11.7	0.96	0.45	5.00		
1.00	0.22	2.49	12.5	0.91	0.45	5.00		
2.53	0.97	1.26	43.0	0.67	0.76	1.00	X	X
3.31	0.48	1.66	56.0	0.68	0.29	1.00	X	X
3.40	0.41	1.70	62.0	0.63	0.24	1.00	X	X
6.48	1.33	3.24	99.0	0.75	0.41	1.00	X	X
17.62	2.70	3.35	232.0	0.87	0.31	0.38	X	
32.19	4.83	2.58	407.0	0.90	0.30	0.16	X	
39.57	7.54	7.52	510.0	0.89	0.38	0.38	X	
39.65	4.35	7.53	515.0	0.88	0.22	0.38	X	
8.41	2.00	4.21	121.0	0.79	0.48	1.00	X	
8.49	1.96	4.25	122.0	0.79	0.46	1.00	X	
13.07	0.33	2.03	160.0	0.93	0.05	0.31	X	X
26.28	1.34	4.07	320.0	0.94	0.10	0.31	X	X
19.50	0.55	4.14	250.0	0.89	0.06	0.42		
19.49	0.62	4.14	250.0	0.89	0.06	0.42		
95.02	2.85	30.88	1300.0	0.83	0.06	0.65	X	
94.62	2.84	30.75	1300.0	0.83	0.06	0.65	X	
38.55	1.10	6.75	493.0	0.89	0.06	0.35		
39.21	1.23	6.86	507.0	0.88	0.06	0.35		
33.58	4.83	16.79	490.0	0.78	0.29	1.00		
34.48	4.82	17.24	500.0	0.79	0.28	1.00		
5.14	1.24	2.57	85.0	0.69	0.48	1.00		
5.29	1.27	2.64	85.0	0.71	0.48	1.00		
5.59	1.34	2.79	85.0	0.75	0.48	1.00		
6.05	1.45	3.02	95.0	0.73	0.48	1.00		
22.77	5.49	11.39	318.0	0.82	0.48	1.00		
8.19	1.64	1.02	90.0	0.96	0.40	0.25	X	
19.50	0.59	2.44	250.0	0.89	0.06	0.25	X	
9.72	2.27	4.86	135.0	0.82	0.47	1.00	X	
3.56	0.77	3.91	63.0	0.64	0.43	2.20		
16.52	1.63	4.95	260.0	0.73	0.20	0.60		
1.03	0.29	1.54	11.0	0.96	0.57	3.00		
1.63	0.46	2.45	16.0	0.96	0.57	3.00		
2.17	0.41	1.08	37.0	0.67	0.37	1.00		
15.98	0.96	4.85	217.0	0.84	0.12	0.61		
15.24	1.22	5.55	211.0	0.82	0.16	0.73		
1.90	0.24	0.68	30.0	0.72	0.26	0.72		
2.62	0.31	0.94	35.0	0.85	0.24	0.72		
0.80	0.18	2.01	9.5	0.96	0.45	5.00		
1.01	0.23	2.52	9.5	0.96	0.45	5.00		
2.05	0.42	5.13	19.0	0.96	0.41	5.00		
2.05	0.54	5.13	19.0	0.96	0.53	5.00		
1.60	0.33	4.01	19.0	0.96	0.41	5.00		
2.05	0.43	5.13	19.0	0.96	0.42	5.00		
3.11	0.34	1.12	49.0	0.72	0.22	0.72		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Iowa	LINN	PRAIRIE CREEK	Coal Steam	1073	4	No SCR or Scrubber >25 MW
2010	Iowa	LOUISA	LOUISA	Coal Steam	6664	101	No SCR or Scrubber >25 MW
2010	Iowa	MARION	PELLA	Coal Steam	1175	6	No SCR or Scrubber >25 MW
2010	Iowa	MARION	PELLA	Coal Steam	1175	7	No SCR or Scrubber >25 MW
2010	Iowa	MARSHALL	SUTHERLAND	Coal Steam	1077	1	No SCR or Scrubber >25 MW
2010	Iowa	MARSHALL	SUTHERLAND	Coal Steam	1077	2	No SCR or Scrubber >25 MW
2010	Iowa	MARSHALL	SUTHERLAND	Coal Steam	1077	3	No SCR or Scrubber >25 MW
2010	Iowa	MUSCATINE	MUSCATINE	Coal Steam	1167	9	Scrubber
2010	Iowa	MUSCATINE	FAIR STATION	Coal Steam	1218	2	No SCR or Scrubber >25 MW
2010	Iowa	MUSCATINE	MUSCATINE	Coal Steam	1167	8	No SCR or Scrubber >25 MW
2010	Iowa	MUSCATINE	FAIR STATION	Coal Steam	1218	1	No SCR or Scrubber <=25 MW
2010	Iowa	POTTAWATTAMIE	COUNCIL BLUFFS	Coal Steam	1082	1	No SCR or Scrubber >25 MW
2010	Iowa	POTTAWATTAMIE	COUNCIL BLUFFS	Coal Steam	1082	2	No SCR or Scrubber >25 MW
2010	Iowa	POTTAWATTAMIE	COUNCIL BLUFFS	Coal Steam	1082	3	No SCR or Scrubber >25 MW
2010	Iowa	SCOTT	RIVERSIDE	Coal Steam	1081	9	No SCR or Scrubber >25 MW
2010	Iowa	SCOTT	RIVERSIDE	Coal Steam	1081	6	No SCR or Scrubber <=25 MW
2010	Iowa	SCOTT	RIVERSIDE	Coal Steam	1081	7	No SCR or Scrubber <=25 MW
2010	Iowa	SCOTT	RIVERSIDE	Coal Steam	1081	8	No SCR or Scrubber <=25 MW
2010	Iowa	STORY	AMES	Coal Steam	1122	7	No SCR or Scrubber >25 MW
2010	Iowa	STORY	AMES	Coal Steam	1122	8	No SCR or Scrubber >25 MW
2010	Iowa	WAPELLO	OTTUMWA	Coal Steam	6254	1	No SCR or Scrubber >25 MW
2010	Iowa	WOODBURY	GEORGE NEAL NORTH	Coal Steam	1091	1	No SCR or Scrubber >25 MW
2010	Iowa	WOODBURY	GEORGE NEAL NORTH	Coal Steam	1091	2	No SCR or Scrubber >25 MW
2010	Iowa	WOODBURY	GEORGE NEAL NORTH	Coal Steam	1091	3	No SCR or Scrubber >25 MW
2010	Iowa	WOODBURY	GEORGE NEAL SOUTH	Coal Steam	7343	4	No SCR or Scrubber >25 MW
2010	Iowa		MAPP_IA_Coal Steam	Coal Steam	0	044	SCR and Scrubber
2010	Kentucky	BELL	PINEVILLE	Coal Steam	1360	3	No SCR or Scrubber >25 MW
2010	Kentucky	BOONE	EAST BEND	Coal Steam	6018	2	SCR and Scrubber
2010	Kentucky	CARROLL	GHENT	Coal Steam	1356	1	Scrubber
2010	Kentucky	CARROLL	GHENT	Coal Steam	1356	4	SCR and Scrubber
2010	Kentucky	CARROLL	GHENT	Coal Steam	1356	3	SCR and Scrubber
2010	Kentucky	CARROLL	GHENT	Coal Steam	1356	2	No SCR or Scrubber >25 MW
2010	Kentucky	CLARK	DALE	Coal Steam	1385	1	No SCR or Scrubber >25 MW
2010	Kentucky	CLARK	DALE	Coal Steam	1385	2	No SCR or Scrubber >25 MW
2010	Kentucky	CLARK	DALE	Coal Steam	1385	3	No SCR or Scrubber >25 MW
2010	Kentucky	CLARK	DALE	Coal Steam	1385	4	No SCR or Scrubber >25 MW
2010	Kentucky	DAVIESS	ELMER SMITH	Coal Steam	1374	2	Scrubber
2010	Kentucky	DAVIESS	ELMER SMITH	Coal Steam	1374	1	SCR and Scrubber
2010	Kentucky	HANCOCK	COLEMAN	Coal Steam	1381	C1	No SCR or Scrubber >25 MW
2010	Kentucky	HANCOCK	COLEMAN	Coal Steam	1381	C2	No SCR or Scrubber >25 MW
2010	Kentucky	HANCOCK	COLEMAN	Coal Steam	1381	C3	No SCR or Scrubber >25 MW
2010	Kentucky	HENDERSON	HMP&L STATION 2	Coal Steam	1382	H2	Scrubber
2010	Kentucky	HENDERSON	HMP&L STATION 2	Coal Steam	1382	H1	SCR and Scrubber
2010	Kentucky	HENDERSON	HENDERSON I	Coal Steam	1372	6	No SCR or Scrubber >25 MW
2010	Kentucky	HENDERSON	HENDERSON I	Coal Steam	1372	5	No SCR or Scrubber <=25 MW
2010	Kentucky	JEFFERSON	MILL CREEK	Coal Steam	1364	2	Scrubber
2010	Kentucky	JEFFERSON	MILL CREEK	Coal Steam	1364	1	Scrubber
2010	Kentucky	JEFFERSON	CANE RUN	Coal Steam	1363	4	SCR and Scrubber
2010	Kentucky	JEFFERSON	CANE RUN	Coal Steam	1363	5	SCR and Scrubber
2010	Kentucky	JEFFERSON	CANE RUN	Coal Steam	1363	6	SCR and Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
7.19	1.34	2.50	142.0	0.58	0.37	0.69		
46.42	5.22	13.37	644.0	0.82	0.23	0.58		
1.70	0.32	1.19	15.7	0.96	0.37	1.40		
2.19	0.41	1.53	20.3	0.96	0.37	1.40		
2.25	0.25	0.58	31.0	0.83	0.22	0.52		
2.31	0.25	0.60	31.0	0.85	0.22	0.52		
5.05	1.45	1.49	80.0	0.72	0.57	0.59		
12.79	0.87	0.60	161.0	0.91	0.14	0.09		
0.73	0.12	0.37	41.0	0.20	0.32	1.00		
1.35	0.33	0.51	76.0	0.20	0.49	0.76		
2.07	0.47	5.17	23.0	0.96	0.45	5.00		
3.30	0.36	1.02	43.0	0.88	0.22	0.62		
5.43	0.39	1.68	88.0	0.70	0.14	0.62		
45.19	5.87	13.94	637.0	0.81	0.26	0.82		
9.14	1.21	2.77	130.0	0.80	0.26	0.61		
0.12	0.04	0.31	1.5	0.96	0.57	5.00		
0.15	0.04	0.37	1.8	0.96	0.57	5.00		
0.15	0.04	0.37	1.8	0.96	0.57	5.00		
2.23	0.16	0.45	30.0	0.85	0.14	0.40		
4.84	0.53	0.97	65.0	0.85	0.22	0.40		
44.32	4.42	13.27	714.0	0.71	0.20	0.60		
9.52	2.35	3.47	135.0	0.80	0.49	0.73		
21.20	2.90	7.38	300.1	0.81	0.27	0.70		
26.96	5.70	9.38	370.9	0.83	0.42	0.70		
45.14	4.67	15.84	624.0	0.83	0.21	0.70		
51.11	1.53	6.75	790.0	0.74	0.06	0.26		
2.14	0.48	1.07	32.0	0.76	0.45	1.00		
46.79	1.40	2.34	600.0	0.89	0.06	0.10	X	X
36.89	4.43	9.22	476.0	0.88	0.24	0.50		
37.15	4.86	17.60	484.3	0.88	0.26	0.95		
38.10	4.99	18.05	497.3	0.87	0.26	0.95		
39.71	4.77	15.17	509.0	0.89	0.24	0.76		
1.76	0.50	1.94	20.0	0.96	0.57	2.20		
1.75	0.50	1.93	20.0	0.96	0.57	2.20		
4.19	0.81	2.86	66.0	0.73	0.38	1.36		
4.78	0.92	3.26	75.0	0.73	0.38	1.36		
18.81	3.17	2.30	249.4	0.86	0.34	0.24		
11.26	0.43	1.13	141.0	0.91	0.08	0.20		
10.27	2.20	5.14	148.6	0.79	0.43	1.00		
10.27	2.17	5.14	148.6	0.79	0.42	1.00		
10.61	1.98	5.31	153.6	0.79	0.37	1.00		
11.73	2.83	1.44	157.5	0.85	0.48	0.24		
11.28	0.50	3.53	151.5	0.85	0.09	0.63		
1.56	0.41	1.72	26.0	0.68	0.53	2.20		
0.84	0.19	2.11	10.0	0.96	0.45	5.00		
24.05	3.09	6.01	301.0	0.91	0.26	0.50	X	X
23.79	3.18	2.91	303.1	0.90	0.27	0.24	X	X
13.08	0.46	2.98	155.0	0.96	0.07	0.46	X	X
14.36	0.50	3.27	168.0	0.96	0.07	0.46	X	X
19.06	0.45	4.35	240.0	0.91	0.05	0.46	X	X

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Kentucky	JEFFERSON	MILL CREEK	Coal Steam	1364	3	SCR and Scrubber
2010	Kentucky	JEFFERSON	MILL CREEK	Coal Steam	1364	4	SCR and Scrubber
2010	Kentucky	LAWRENCE	BIG SANDY	Coal Steam	1353	BSU2	SCR and Scrubber
2010	Kentucky	LAWRENCE	BIG SANDY	Coal Steam	1353	BSU1	SCR
2010	Kentucky	MASON	H L SPURLOCK	Coal Steam	6041	2	SCR and Scrubber
2010	Kentucky	MASON	H L SPURLOCK	Coal Steam	6041	1	SCR
2010	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	10	No SCR or Scrubber >25 MW
2010	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	1	No SCR or Scrubber >25 MW
2010	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	2	No SCR or Scrubber >25 MW
2010	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	3	No SCR or Scrubber >25 MW
2010	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	4	No SCR or Scrubber >25 MW
2010	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	5	No SCR or Scrubber >25 MW
2010	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	6	No SCR or Scrubber >25 MW
2010	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	7	No SCR or Scrubber >25 MW
2010	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	8	No SCR or Scrubber >25 MW
2010	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	9	No SCR or Scrubber >25 MW
2010	Kentucky	MERCER	E W BROWN	Coal Steam	1355	1	No SCR or Scrubber >25 MW
2010	Kentucky	MERCER	E W BROWN	Coal Steam	1355	2	No SCR or Scrubber >25 MW
2010	Kentucky	MERCER	E W BROWN	Coal Steam	1355	3	No SCR or Scrubber >25 MW
2010	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	2	Scrubber
2010	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	3	Scrubber
2010	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	1	Scrubber
2010	Kentucky	MUHLENBERG	PARADISE	Coal Steam	1378	1	SCR and Scrubber
2010	Kentucky	MUHLENBERG	PARADISE	Coal Steam	1378	2	SCR and Scrubber
2010	Kentucky	MUHLENBERG	PARADISE	Coal Steam	1378	3	SCR and Scrubber
2010	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	4	No SCR or Scrubber >25 MW
2010	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	5	No SCR or Scrubber >25 MW
2010	Kentucky	OHIO	D B WILSON	Coal Steam	6823	W1	SCR and Scrubber
2010	Kentucky	PULASKI	COOPER	Coal Steam	1384	2	SCR
2010	Kentucky	PULASKI	COOPER	Coal Steam	1384	1	No SCR or Scrubber >25 MW
2010	Kentucky	TRIMBLE	TRIMBLE COUNTY	Coal Steam	6071	1	SCR and Scrubber
2010	Kentucky	WEBSTER	R D GREEN	Coal Steam	6639	G2	Scrubber
2010	Kentucky	WEBSTER	R D GREEN	Coal Steam	6639	G1	Scrubber
2010	Kentucky	WEBSTER	ROBERT REID	Coal Steam	1383	R1	No SCR or Scrubber >25 MW
2010	Kentucky	WOODFORD	TYRONE	Coal Steam	1361	5	No SCR or Scrubber >25 MW
2010	Kentucky		ECAO_KY_Coal Steam	Coal Steam	0	013	SCR and Scrubber
2010	Louisiana	CALCASIEU	Nelson Coal	Coal Steam	1393	6	Scrubber
2010	Louisiana	DE SOTO	DOLET HILLS	Coal Steam	51	1	Scrubber
2010	Louisiana	POINTE COUPEE	BIG CAJUN 2	Coal Steam	6055	2B3	No SCR or Scrubber >25 MW
2010	Louisiana	POINTE COUPEE	BIG CAJUN 2	Coal Steam	6055	2B2	No SCR or Scrubber >25 MW
2010	Louisiana	POINTE COUPEE	BIG CAJUN 2	Coal Steam	6055	2B1	No SCR or Scrubber >25 MW
2010	Louisiana	RAPIDES	RODEMACHER	Coal Steam	6190	2	Scrubber
2010	Maryland	ALLEGANY	AES Warrior Run Cogeneration Facility	Coal Steam	10678	GEN1	No SCR or Scrubber <=25 MW
2010	Maryland	ANNE ARUNDEL	HERBERT A WAGNER	Coal Steam	1554	3	SCR and Scrubber
2010	Maryland	ANNE ARUNDEL	BRANDON SHORES	Coal Steam	602	1	SCR and Scrubber
2010	Maryland	ANNE ARUNDEL	BRANDON SHORES	Coal Steam	602	2	SCR and Scrubber
2010	Maryland	ANNE ARUNDEL	HERBERT A WAGNER	Coal Steam	1554	2	No SCR or Scrubber >25 MW
2010	Maryland	BALTIMORE	C P CRANE	Coal Steam	1552	1	SCR
2010	Maryland	BALTIMORE	C P CRANE	Coal Steam	1552	2	SCR
2010	Maryland	CHARLES	MORGANTOWN	Coal Steam	1573	1	SCR and Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
30.12	0.98	9.41	386.1	0.89	0.06	0.63	X	X
37.44	1.08	11.70	480.1	0.89	0.06	0.63	X	X
59.69	1.79	38.07	798.4	0.85	0.06	1.28	X	X
18.64	0.56	12.29	260.0	0.82	0.06	1.32	X	X
38.97	1.17	4.87	489.5	0.91	0.06	0.25		
21.72	0.65	11.95	300.0	0.83	0.06	1.10		
11.43	2.10	3.43	124.0	0.96	0.37	0.60		
10.33	1.99	3.47	134.0	0.88	0.38	0.67		
10.28	1.98	3.45	134.0	0.88	0.38	0.67		
10.28	1.98	3.45	134.0	0.88	0.38	0.67		
10.28	1.98	3.46	134.0	0.88	0.38	0.67		
10.29	1.98	3.46	134.0	0.88	0.38	0.67		
10.09	1.85	3.39	134.0	0.86	0.37	0.67		
10.28	1.89	3.45	134.0	0.88	0.37	0.67		
10.31	1.89	3.46	134.0	0.88	0.37	0.67		
10.33	1.90	3.47	134.0	0.88	0.37	0.67		
6.37	1.48	3.19	105.0	0.69	0.47	1.00		
11.58	2.02	5.79	168.1	0.79	0.35	1.00		
27.35	4.76	13.67	384.1	0.81	0.35	1.00		
1.39	0.47	0.51	17.5	0.91	0.68	0.72		
1.65	0.56	0.60	17.5	0.96	0.88	0.72		
1.24	0.42	0.45	18.0	0.79	0.67	0.72		
48.05	1.97	17.78	602.0	0.91	0.08	0.74		
47.81	1.94	10.93	625.0	0.87	0.08	0.46		
75.13	2.78	22.54	963.0	0.89	0.07	0.60		
4.77	0.76	2.38	71.0	0.77	0.32	1.00		
6.85	1.34	3.43	108.0	0.72	0.39	1.00		
32.45	1.28	10.14	416.2	0.89	0.08	0.63		
16.67	0.50	11.41	225.0	0.85	0.06	1.37		
8.00	1.75	5.43	116.0	0.79	0.44	1.36		
34.84	1.05	2.61	435.0	0.91	0.06	0.15		
16.46	2.54	2.02	221.1	0.85	0.31	0.24		
17.05	3.29	2.09	229.0	0.85	0.39	0.24		
3.52	0.93	3.87	64.0	0.63	0.53	2.20		
4.57	0.74	3.11	72.0	0.72	0.32	1.36		
17.34	0.10	5.42	268.1	0.74	0.01	0.63		
40.94	3.85	3.07	538.5	0.87	0.19	0.15		
52.10	7.61	5.74	650.0	0.92	0.29	0.22		
44.33	3.41	16.69	575.0	0.88	0.15	0.75		
45.55	5.38	17.35	575.0	0.90	0.24	0.76		
47.03	5.55	17.92	580.0	0.93	0.24	0.76		
41.98	4.56	1.26	512.0	0.94	0.22	0.06		
10.41	0.65	7.81	204.0	0.58	0.13	1.50		
25.85	0.78	1.55	317.2	0.93	0.06	0.12	X	
50.66	1.52	4.53	631.5	0.92	0.06	0.18	X	
48.98	1.47	4.79	632.4	0.88	0.06	0.20	X	
8.23	2.00	6.17	135.0	0.70	0.49	1.50	X	
13.23	0.63	9.92	190.0	0.79	0.09	1.50	X	
12.87	0.51	9.65	190.0	0.77	0.08	1.50	X	
40.50	1.23	3.81	569.8	0.81	0.06	0.19	X	

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Maryland	CHARLES	MORGANTOWN	Coal Steam	1573	2	SCR and Scrubber
2010	Maryland	MONTGOMERY	DICKERSON	Coal Steam	1572	1	SCR and Scrubber
2010	Maryland	MONTGOMERY	DICKERSON	Coal Steam	1572	3	SCR and Scrubber
2010	Maryland	MONTGOMERY	DICKERSON	Coal Steam	1572	2	SCR and Scrubber
2010	Maryland	PRINCE GEORGE'S	CHALK POINT	Coal Steam	1571	1	SCR and Scrubber
2010	Maryland	PRINCE GEORGE'S	CHALK POINT	Coal Steam	1571	2	SCR and Scrubber
2010	Massachusetts	BRISTOL	SOMERSET	Coal Steam	1613	8	Scrubber
2010	Massachusetts	BRISTOL	BRAYTON POINT	Coal Steam	1619	2	SCR and Scrubber
2010	Massachusetts	BRISTOL	BRAYTON POINT	Coal Steam	1619	1	SCR and Scrubber
2010	Massachusetts	BRISTOL	BRAYTON POINT	Coal Steam	1619	3	SCR and Scrubber
2010	Massachusetts	ESSEX	SALEM HARBOR	Coal Steam	1626	3	Scrubber
2010	Massachusetts	ESSEX	SALEM HARBOR	Coal Steam	1626	2	No SCR or Scrubber >25 MW
2010	Massachusetts	ESSEX	SALEM HARBOR	Coal Steam	1626	1	No SCR or Scrubber >25 MW
2010	Massachusetts	HAMPDEN	MOUNT TOM	Coal Steam	1606	1	Scrubber
2010	Michigan	BAY	DAN E KARN	Coal Steam	1702	2	SCR
2010	Michigan	BAY	J C WEADOCK	Coal Steam	1720	7	No SCR or Scrubber >25 MW
2010	Michigan	BAY	J C WEADOCK	Coal Steam	1720	8	No SCR or Scrubber >25 MW
2010	Michigan	BAY	DAN E KARN	Coal Steam	1702	1	No SCR or Scrubber >25 MW
2010	Michigan	DELTA	ESCANABA	Coal Steam	1771	1	No SCR or Scrubber <=25 MW
2010	Michigan	DELTA	ESCANABA	Coal Steam	1771	2	No SCR or Scrubber <=25 MW
2010	Michigan	EATON	ERICKSON	Coal Steam	1832	1	No SCR or Scrubber >25 MW
2010	Michigan	GRAND TRAVERSE	BAYSIDE	Coal Steam	1859	1	No SCR or Scrubber <=25 MW
2010	Michigan	GRAND TRAVERSE	BAYSIDE	Coal Steam	1859	2	No SCR or Scrubber <=25 MW
2010	Michigan	GRAND TRAVERSE	BAYSIDE	Coal Steam	1859	4	No SCR or Scrubber <=25 MW
2010	Michigan	HILLSDALE	ENDICOTT	Coal Steam	4259	1	Scrubber
2010	Michigan	HURON	HARBOR BEACH	Coal Steam	1731	1	No SCR or Scrubber >25 MW
2010	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	2	No SCR or Scrubber >25 MW
2010	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	1	No SCR or Scrubber >25 MW
2010	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	3	No SCR or Scrubber >25 MW
2010	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	4	No SCR or Scrubber >25 MW
2010	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	6	No SCR or Scrubber >25 MW
2010	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	5	No SCR or Scrubber >25 MW
2010	Michigan	MANISTEE	TES Filer City Station	Coal Steam	50835	GEN1	Scrubber
2010	Michigan	MARQUETTE	SHIRAS	Coal Steam	1843	3	Scrubber
2010	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	1	No SCR or Scrubber >25 MW
2010	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	2	No SCR or Scrubber >25 MW
2010	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	3	No SCR or Scrubber >25 MW
2010	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	4	No SCR or Scrubber >25 MW
2010	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	7	No SCR or Scrubber >25 MW
2010	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	8	No SCR or Scrubber >25 MW
2010	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	5	No SCR or Scrubber >25 MW
2010	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	9	No SCR or Scrubber >25 MW
2010	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	6	No SCR or Scrubber >25 MW
2010	Michigan	MARQUETTE	SHIRAS	Coal Steam	1843	2	No SCR or Scrubber <=25 MW
2010	Michigan	MONROE	MONROE	Coal Steam	1733	1	SCR
2010	Michigan	MONROE	MONROE	Coal Steam	1733	2	SCR
2010	Michigan	MONROE	MONROE	Coal Steam	1733	3	SCR
2010	Michigan	MONROE	MONROE	Coal Steam	1733	4	SCR
2010	Michigan	MONROE	J R WHITING	Coal Steam	1723	1	No SCR or Scrubber >25 MW
2010	Michigan	MONROE	J R WHITING	Coal Steam	1723	2	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
39.83	1.18	3.75	569.8	0.80	0.06	0.19	X	
13.29	0.37	0.80	178.2	0.85	0.06	0.12	X	
12.81	0.36	0.77	178.2	0.82	0.06	0.12	X	
14.45	0.43	0.87	178.2	0.93	0.06	0.12	X	
25.10	0.78	1.51	333.8	0.86	0.06	0.12	X	
25.18	0.78	1.51	334.8	0.86	0.06	0.12	X	
8.37	0.85	2.99	110.2	0.87	0.20	0.71		
18.24	1.25	0.80	223.8	0.93	0.14	0.09		
18.78	1.30	0.83	230.4	0.93	0.14	0.09		
46.52	4.49	2.05	570.8	0.93	0.19	0.09		
10.71	1.08	3.82	141.0	0.87	0.20	0.71		
5.66	0.54	3.11	76.0	0.85	0.19	1.10		
5.52	0.54	3.04	78.0	0.81	0.20	1.10		
11.15	1.94	0.49	142.9	0.89	0.35	0.09		
19.83	0.59	9.91	260.0	0.87	0.06	1.00		
13.52	0.99	6.23	155.0	0.96	0.15	0.92		
13.33	0.98	6.15	155.0	0.96	0.15	0.92		
20.55	1.50	9.47	255.0	0.92	0.15	0.92		
1.09	0.25	0.55	13.0	0.96	0.45	1.00		
1.10	0.25	0.55	13.0	0.96	0.45	1.00		
10.43	2.13	4.07	156.0	0.76	0.41	0.78		
0.36	0.08	0.18	4.2	0.96	0.45	1.00		
0.36	0.08	0.18	4.2	0.96	0.45	1.00		
1.22	0.28	0.61	15.3	0.91	0.45	1.00		
3.96	0.52	0.24	50.0	0.90	0.26	0.12		
6.96	1.32	3.48	103.0	0.77	0.38	1.00		
2.70	0.18	0.79	42.5	0.72	0.13	0.59		
2.44	0.37	0.72	45.0	0.62	0.30	0.59		
2.89	0.17	0.85	45.5	0.73	0.12	0.59		
4.60	0.77	1.35	76.4	0.69	0.33	0.59		
4.70	0.64	1.38	76.6	0.70	0.27	0.59		
5.58	0.58	1.70	77.0	0.83	0.21	0.61		
4.37	0.98	0.33	55.0	0.91	0.45	0.15		
3.49	0.22	0.52	44.0	0.90	0.13	0.30		
2.11	0.50	1.06	25.0	0.96	0.47	1.00		
2.68	0.32	1.34	37.0	0.83	0.24	1.00		
3.56	0.84	1.78	58.0	0.70	0.47	1.00		
3.57	0.84	1.78	58.0	0.70	0.47	1.00		
5.63	1.38	1.52	85.0	0.76	0.49	0.54		
5.59	1.36	1.51	85.0	0.75	0.49	0.54		
5.28	1.68	2.64	87.0	0.69	0.63	1.00		
5.77	1.42	1.56	88.0	0.75	0.49	0.54		
5.35	1.02	2.67	90.0	0.68	0.38	1.00		
2.22	0.50	1.11	21.0	0.96	0.45	1.00		
53.55	1.77	26.77	750.0	0.82	0.07	1.00	X	X
53.24	1.76	26.62	750.0	0.81	0.07	1.00	X	X
52.92	1.43	26.46	750.0	0.81	0.05	1.00	X	X
59.20	1.60	29.60	750.0	0.90	0.05	1.00	X	X
7.02	0.90	3.51	95.0	0.84	0.25	1.00	X	X
6.73	0.97	3.37	95.0	0.81	0.29	1.00	X	X

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Michigan	MONROE	J R WHITING	Coal Steam	1723	3	No SCR or Scrubber >25 MW
2010	Michigan	MUSKEGON	B C COBB	Coal Steam	1695	5	No SCR or Scrubber >25 MW
2010	Michigan	MUSKEGON	B C COBB	Coal Steam	1695	4	No SCR or Scrubber >25 MW
2010	Michigan	OTTAWA	J B SIMS	Coal Steam	1825	3	Scrubber
2010	Michigan	OTTAWA	JAMES DE YOUNG	Coal Steam	1830	5	No SCR or Scrubber >25 MW
2010	Michigan	OTTAWA	J H CAMPBELL	Coal Steam	1710	1	No SCR or Scrubber >25 MW
2010	Michigan	OTTAWA	J H CAMPBELL	Coal Steam	1710	2	No SCR or Scrubber >25 MW
2010	Michigan	OTTAWA	J H CAMPBELL	Coal Steam	1710	3	No SCR or Scrubber >25 MW
2010	Michigan	OTTAWA	JAMES DE YOUNG	Coal Steam	1830	3	No SCR or Scrubber <=25 MW
2010	Michigan	OTTAWA	JAMES DE YOUNG	Coal Steam	1830	4	No SCR or Scrubber <=25 MW
2010	Michigan	ST. CLAIR	MARYSVILLE	Coal Steam	1732	10	No SCR or Scrubber >25 MW
2010	Michigan	ST. CLAIR	MARYSVILLE	Coal Steam	1732	11	No SCR or Scrubber >25 MW
2010	Michigan	ST. CLAIR	MARYSVILLE	Coal Steam	1732	12	No SCR or Scrubber >25 MW
2010	Michigan	ST. CLAIR	MARYSVILLE	Coal Steam	1732	9	No SCR or Scrubber >25 MW
2010	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	2	No SCR or Scrubber >25 MW
2010	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	4	No SCR or Scrubber >25 MW
2010	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	1	No SCR or Scrubber >25 MW
2010	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	3	No SCR or Scrubber >25 MW
2010	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	6	No SCR or Scrubber >25 MW
2010	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	7	No SCR or Scrubber >25 MW
2010	Michigan	ST. CLAIR	BELLE RIVER	Coal Steam	6034	1	No SCR or Scrubber >25 MW
2010	Michigan	ST. CLAIR	BELLE RIVER	Coal Steam	6034	2	No SCR or Scrubber >25 MW
2010	Michigan	WAYNE	WYANDOTTE	Coal Steam	1866	8	Scrubber
2010	Michigan	WAYNE	WYANDOTTE	Coal Steam	1866	7	No SCR or Scrubber >25 MW
2010	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	16	No SCR or Scrubber >25 MW
2010	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	17	No SCR or Scrubber >25 MW
2010	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	18	No SCR or Scrubber >25 MW
2010	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	19	No SCR or Scrubber >25 MW
2010	Michigan	WAYNE	CONNERS CREEK	Coal Steam	1726	15	No SCR or Scrubber >25 MW
2010	Michigan	WAYNE	CONNERS CREEK	Coal Steam	1726	16	No SCR or Scrubber >25 MW
2010	Michigan	WAYNE	RIVER ROUGE	Coal Steam	1740	2	No SCR or Scrubber >25 MW
2010	Michigan	WAYNE	RIVER ROUGE	Coal Steam	1740	3	No SCR or Scrubber >25 MW
2010	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	9A	No SCR or Scrubber >25 MW
2010	Minnesota	BROWN	Springfield	Coal Steam	2012	4	No SCR or Scrubber <=25 MW
2010	Minnesota	CHIPPEWA	MINNESOTA VALLEY	Coal Steam	1918	4	No SCR or Scrubber >25 MW
2010	Minnesota	DAKOTA	BLACK DOG	Coal Steam	1904	3	No SCR or Scrubber >25 MW
2010	Minnesota	DAKOTA	BLACK DOG	Coal Steam	1904	4	No SCR or Scrubber >25 MW
2010	Minnesota	HENNEPIN	RIVERSIDE	Coal Steam	1927	6	No SCR or Scrubber >25 MW
2010	Minnesota	ITASCA	CLAY BOSWELL	Coal Steam	1893	3	Scrubber
2010	Minnesota	ITASCA	CLAY BOSWELL	Coal Steam	1893	1	No SCR or Scrubber >25 MW
2010	Minnesota	ITASCA	CLAY BOSWELL	Coal Steam	1893	2	No SCR or Scrubber >25 MW
2010	Minnesota	ITASCA	CLAY BOSWELL	Coal Steam	1893	4	No SCR or Scrubber >25 MW
2010	Minnesota	KANDIYOHI	WILLMAR	Coal Steam	2022	1	No SCR or Scrubber <=25 MW
2010	Minnesota	KANDIYOHI	WILLMAR	Coal Steam	2022	2	No SCR or Scrubber <=25 MW
2010	Minnesota	KANDIYOHI	WILLMAR	Coal Steam	2022	3	No SCR or Scrubber <=25 MW
2010	Minnesota	LAKE	Silver Bay Power Company	Coal Steam	10849	GEN1	No SCR or Scrubber <=25 MW
2010	Minnesota	LAKE	Silver Bay Power Company	Coal Steam	10849	GEN2	No SCR or Scrubber <=25 MW
2010	Minnesota	MOWER	NORTHEAST STATION	Coal Steam	1961	NEPP	No SCR or Scrubber >25 MW
2010	Minnesota	OLMSTED	SILVER LAKE	Coal Steam	2008	4	No SCR or Scrubber >25 MW
2010	Minnesota	OLMSTED	SILVER LAKE	Coal Steam	2008	1	No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
11.12	1.44	5.13	120.0	0.96	0.26	0.92	X	X
14.52	1.27	6.69	159.0	0.96	0.17	0.92		
14.49	1.03	6.68	161.0	0.96	0.14	0.92		
5.63	1.02	0.44	65.0	0.96	0.36	0.16		
1.76	0.36	0.88	27.0	0.74	0.41	1.00		
22.03	2.98	10.16	254.0	0.96	0.27	0.92		
26.57	6.95	12.25	355.0	0.85	0.52	0.92		
61.42	11.15	28.31	790.1	0.89	0.36	0.92		
0.92	0.21	0.46	10.5	0.96	0.45	1.00		
1.80	0.41	0.90	20.7	0.96	0.45	1.00		
3.92	0.47	1.96	50.0	0.89	0.24	1.00	X	X
3.92	0.47	1.96	50.0	0.89	0.24	1.00	X	X
3.92	0.47	1.96	50.0	0.89	0.24	1.00	X	X
3.92	0.47	1.96	50.0	0.89	0.24	1.00	X	X
12.61	1.60	5.81	162.0	0.89	0.25	0.92	X	X
12.03	1.42	5.55	162.0	0.85	0.24	0.92	X	X
11.97	1.41	5.52	163.0	0.84	0.24	0.92	X	X
11.96	1.38	5.51	163.0	0.84	0.23	0.92	X	X
21.55	1.61	10.78	294.0	0.84	0.15	1.00	X	X
32.97	3.07	16.46	435.0	0.87	0.19	1.00	X	X
47.84	5.44	13.54	625.1	0.67	0.23	0.57	X	X
48.74	3.83	13.79	634.9	0.88	0.16	0.57	X	X
1.69	0.16	0.26	20.0	0.96	0.19	0.31	X	X
1.69	0.32	0.84	20.0	0.96	0.38	1.00	X	X
1.67	0.20	0.83	26.2	0.72	0.24	1.00	X	X
1.84	0.22	0.92	26.2	0.80	0.24	1.00	X	X
1.67	0.20	0.83	26.2	0.72	0.24	1.00	X	X
1.67	0.20	0.83	26.2	0.72	0.24	1.00	X	X
9.91	0.37	4.96	118.0	0.96	0.07	1.00	X	X
9.91	0.35	4.96	118.0	0.96	0.07	1.00	X	X
17.93	2.64	6.97	238.0	0.86	0.29	1.00	X	X
19.09	3.43	9.54	262.0	0.83	0.36	1.00	X	X
35.32	2.94	17.66	515.0	0.76	0.17	1.00	X	X
0.40	0.09	0.20	4.0	0.96	0.45	1.00		
2.92	0.42	1.46	46.0	0.72	0.29	1.00		
8.85	1.02	1.77	112.0	0.90	0.23	0.40		
13.56	1.57	2.71	173.0	0.89	0.23	0.40		
4.76	0.54	0.95	75.0	0.72	0.23	0.40		
25.21	1.85	12.61	350.0	0.82	0.15	1.00		
4.19	0.56	2.09	69.0	0.69	0.27	1.00		
4.16	0.56	2.08	69.0	0.69	0.27	1.00		
43.19	4.86	8.64	535.0	0.92	0.23	0.40		
0.32	0.07	0.33	4.0	0.91	0.45	2.10		
0.35	0.03	0.37	4.0	0.96	0.19	2.10		
1.27	0.29	1.33	16.0	0.91	0.45	2.10		
0.03	0.01	0.03	0.3	0.91	0.44	2.10		
0.05	0.01	0.05	0.7	0.91	0.44	2.10		
1.87	0.30	0.93	29.0	0.73	0.32	1.00		
4.00	0.64	2.00	60.0	0.76	0.32	1.00		
0.81	0.16	0.85	9.1	0.96	0.45	2.10		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Minnesota	OLMSTED	SILVER LAKE	Coal Steam	2008	2	No SCR or Scrubber <=25 MW
2010	Minnesota	OLMSTED	SILVER LAKE	Coal Steam	2008	3	No SCR or Scrubber <=25 MW
2010	Minnesota	OTTER TAIL	HOOT LAKE	Coal Steam	1943	1	No SCR or Scrubber >25 MW
2010	Minnesota	OTTER TAIL	HOOT LAKE	Coal Steam	1943	2	No SCR or Scrubber >25 MW
2010	Minnesota	OTTER TAIL	HOOT LAKE	Coal Steam	1943	3	No SCR or Scrubber >25 MW
2010	Minnesota	SHERBURNE	SHERBURNE COUNTY	Coal Steam	6090	2	Scrubber
2010	Minnesota	SHERBURNE	SHERBURNE COUNTY	Coal Steam	6090	1	Scrubber
2010	Minnesota	SHERBURNE	SHERBURNE COUNTY	Coal Steam	6090	3	Scrubber
2010	Minnesota	ST. LOUIS	SYL LASKIN	Coal Steam	1891	1	Scrubber
2010	Minnesota	ST. LOUIS	SYL LASKIN	Coal Steam	1891	2	Scrubber
2010	Minnesota	ST. LOUIS	M L HIBBARD	Coal Steam	1897	3	No SCR or Scrubber >25 MW
2010	Minnesota	ST. LOUIS	VIRGINIA	Coal Steam	2018	7	No SCR or Scrubber <=25 MW
2010	Minnesota	ST. LOUIS	VIRGINIA	Coal Steam	2018	9	No SCR or Scrubber <=25 MW
2010	Minnesota	ST. LOUIS	HIBBING	Coal Steam	1979	1	No SCR or Scrubber <=25 MW
2010	Minnesota	ST. LOUIS	HIBBING	Coal Steam	1979	2	No SCR or Scrubber <=25 MW
2010	Minnesota	ST. LOUIS	HIBBING	Coal Steam	1979	3	No SCR or Scrubber <=25 MW
2010	Minnesota	ST. LOUIS	M L HIBBARD	Coal Steam	1897	4	No SCR or Scrubber <=25 MW
2010	Minnesota	WASHINGTON	ALLEN S KING	Coal Steam	1915	1	SCR and Scrubber
2010	Mississippi	CHOCTAW	Red Hills Generating Facility	Coal Steam	55076	350	SCR and Scrubber
2010	Mississippi	HARRISON	JACK WATSON	Coal Steam	2049	4	No SCR or Scrubber >25 MW
2010	Mississippi	HARRISON	JACK WATSON	Coal Steam	2049	5	No SCR or Scrubber >25 MW
2010	Mississippi	JACKSON	VICTOR J DANIEL JR.	Coal Steam	6073	1	No SCR or Scrubber >25 MW
2010	Mississippi	JACKSON	VICTOR J DANIEL JR.	Coal Steam	6073	2	No SCR or Scrubber >25 MW
2010	Mississippi	LAMAR	R D MORROW	Coal Steam	6061	1	Scrubber
2010	Mississippi	LAMAR	R D MORROW	Coal Steam	6061	2	Scrubber
2010	Missouri	BOONE	COLUMBIA	Coal Steam	2123	6	No SCR or Scrubber >25 MW
2010	Missouri	BOONE	COLUMBIA	Coal Steam	2123	7	No SCR or Scrubber >25 MW
2010	Missouri	BOONE	COLUMBIA	Coal Steam	2123	8	No SCR or Scrubber <=25 MW
2010	Missouri	BUCHANAN	LAKE ROAD	Coal Steam	2098	5	No SCR or Scrubber <=25 MW
2010	Missouri	CLAY	MISSOURI CITY	Coal Steam	2171	1	No SCR or Scrubber <=25 MW
2010	Missouri	CLAY	MISSOURI CITY	Coal Steam	2171	2	No SCR or Scrubber <=25 MW
2010	Missouri	FRANKLIN	LABADIE	Coal Steam	2103	1	No SCR or Scrubber >25 MW
2010	Missouri	FRANKLIN	LABADIE	Coal Steam	2103	2	No SCR or Scrubber >25 MW
2010	Missouri	FRANKLIN	LABADIE	Coal Steam	2103	3	No SCR or Scrubber >25 MW
2010	Missouri	FRANKLIN	LABADIE	Coal Steam	2103	4	No SCR or Scrubber >25 MW
2010	Missouri	GREENE	SOUTHWEST	Coal Steam	6195	1	Scrubber
2010	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	3	No SCR or Scrubber >25 MW
2010	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	4	No SCR or Scrubber >25 MW
2010	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	5	No SCR or Scrubber >25 MW
2010	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	1	No SCR or Scrubber <=25 MW
2010	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	2	No SCR or Scrubber <=25 MW
2010	Missouri	HENRY	MONTROSE	Coal Steam	2080	2	No SCR or Scrubber >25 MW
2010	Missouri	HENRY	MONTROSE	Coal Steam	2080	1	No SCR or Scrubber >25 MW
2010	Missouri	HENRY	MONTROSE	Coal Steam	2080	3	No SCR or Scrubber >25 MW
2010	Missouri	JACKSON	HAWTHORN	Coal Steam	2079	5	SCR and Scrubber
2010	Missouri	JACKSON	SIBLEY	Coal Steam	2094	3	SCR
2010	Missouri	JACKSON	BLUE VALLEY	Coal Steam	2132	3	No SCR or Scrubber >25 MW
2010	Missouri	JACKSON	SIBLEY	Coal Steam	2094	2	No SCR or Scrubber >25 MW
2010	Missouri	JACKSON	SIBLEY	Coal Steam	2094	1	No SCR or Scrubber >25 MW
2010	Missouri	JACKSON	BLUE VALLEY	Coal Steam	2132	1	No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
1.23	0.28	1.29	13.9	0.96	0.45	2.10		
2.04	0.46	2.15	23.0	0.96	0.45	2.10		
0.68	0.15	0.71	8.0	0.96	0.45	2.10		
4.92	0.36	1.39	64.6	0.87	0.15	0.56		
6.39	0.66	1.80	84.4	0.86	0.21	0.56		
50.15	6.32	7.02	709.0	0.81	0.25	0.28		
54.32	4.51	7.60	712.0	0.87	0.17	0.28		
64.49	7.48	8.71	871.0	0.85	0.23	0.27		
3.85	0.96	0.77	55.0	0.80	0.50	0.40		
3.85	0.96	0.77	55.0	0.80	0.50	0.40		
2.45	0.33	1.22	37.0	0.76	0.27	1.00		
0.56	0.13	0.58	7.0	0.91	0.45	2.10		
0.56	0.13	0.58	7.0	0.91	0.45	2.10		
0.79	0.18	0.83	10.0	0.91	0.45	2.10		
0.79	0.18	0.83	10.0	0.91	0.45	2.10		
0.74	0.17	0.77	10.0	0.84	0.45	2.10		
1.51	0.20	1.59	14.0	0.96	0.27	2.10		
37.75	1.34	5.50	571.0	0.75	0.07	0.29		
28.47	0.85	8.54	440.0	0.74	0.06	0.60		
19.47	3.36	9.73	263.0	0.85	0.35	1.00		
37.79	7.66	18.89	499.0	0.86	0.41	1.00		
38.64	6.05	19.32	522.0	0.85	0.31	1.00		
38.37	6.39	19.18	524.0	0.84	0.33	1.00		
16.59	2.65	4.98	200.0	0.95	0.32	0.60		
16.59	2.65	4.98	200.0	0.95	0.32	0.60		
1.18	0.31	2.96	14.0	0.96	0.52	5.00		
3.62	0.94	1.81	57.0	0.72	0.52	1.00		
0.18	0.03	0.45	2.0	0.96	0.29	5.00		
2.19	0.62	1.53	21.0	0.96	0.57	1.40		
1.79	0.40	4.48	19.0	0.96	0.45	5.00		
1.79	0.40	4.48	19.0	0.96	0.45	5.00		
44.91	2.54	15.67	574.0	0.89	0.11	0.70	X	X
43.74	2.51	15.26	574.0	0.87	0.11	0.70	X	X
44.70	2.41	15.60	576.0	0.89	0.11	0.70	X	X
44.92	2.44	15.68	576.0	0.89	0.11	0.70	X	X
12.89	2.14	1.08	178.0	0.83	0.33	0.17		
3.09	0.89	0.74	41.0	0.86	0.58	0.48		
3.80	1.04	0.91	55.0	0.79	0.55	0.48		
6.59	1.48	1.58	97.0	0.78	0.45	0.48		
1.99	0.42	1.39	21.0	0.96	0.42	1.40		
1.99	0.42	1.39	21.0	0.96	0.42	1.40		
9.97	1.75	4.99	153.0	0.74	0.35	1.00		
10.22	1.43	5.11	155.0	0.75	0.28	1.00		
10.23	1.80	5.11	161.0	0.73	0.35	1.00		
42.26	1.27	1.77	550.0	0.88	0.06	0.08		
28.78	0.98	10.19	390.0	0.84	0.07	0.71		
3.41	0.56	1.71	51.0	0.76	0.33	1.00		
3.51	1.19	1.23	53.0	0.76	0.68	0.70		
3.42	1.16	1.20	53.0	0.74	0.68	0.70		
1.77	0.38	0.89	21.0	0.96	0.42	1.00		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Missouri	JACKSON	BLUE VALLEY	Coal Steam	2132	2	No SCR or Scrubber <=25 MW
2010	Missouri	JASPER	ASBURY	Coal Steam	2076	1	SCR
2010	Missouri	JEFFERSON	RUSH ISLAND	Coal Steam	6155	1	No SCR or Scrubber >25 MW
2010	Missouri	JEFFERSON	RUSH ISLAND	Coal Steam	6155	2	No SCR or Scrubber >25 MW
2010	Missouri	LIVINGSTON	Chillicothe	Coal Steam	2122	4A	No SCR or Scrubber <=25 MW
2010	Missouri	LIVINGSTON	CHILLICOTHE	Coal Steam	2122	5	No SCR or Scrubber <=25 MW
2010	Missouri	LIVINGSTON	CHILLICOTHE	Coal Steam	2122	6	No SCR or Scrubber <=25 MW
2010	Missouri	NEW MADRID	NEW MADRID	Coal Steam	2167	1	SCR
2010	Missouri	NEW MADRID	NEW MADRID	Coal Steam	2167	2	SCR
2010	Missouri	OSAGE	CHAMOIS	Coal Steam	2169	2	No SCR or Scrubber >25 MW
2010	Missouri	OSAGE	CHAMOIS	Coal Steam	2169	1	No SCR or Scrubber <=25 MW
2010	Missouri	PLATTE	IATAN	Coal Steam	6065	1	No SCR or Scrubber >25 MW
2010	Missouri	RANDOLPH	THOMAS HILL	Coal Steam	2168	MB1	SCR
2010	Missouri	RANDOLPH	THOMAS HILL	Coal Steam	2168	MB2	SCR
2010	Missouri	RANDOLPH	THOMAS HILL	Coal Steam	2168	MB3	No SCR or Scrubber >25 MW
2010	Missouri	SALINE	MARSHALL	Coal Steam	2144	4	No SCR or Scrubber <=25 MW
2010	Missouri	SCOTT	SIKESTON	Coal Steam	6768	1	Scrubber
2010	Missouri	ST. CHARLES	SIOUX	Coal Steam	2107	1	SCR
2010	Missouri	ST. CHARLES	SIOUX	Coal Steam	2107	2	SCR
2010	Missouri	ST. LOUIS	MERAMEC	Coal Steam	2104	1	No SCR or Scrubber >25 MW
2010	Missouri	ST. LOUIS	MERAMEC	Coal Steam	2104	2	No SCR or Scrubber >25 MW
2010	Missouri	ST. LOUIS	MERAMEC	Coal Steam	2104	3	No SCR or Scrubber >25 MW
2010	Missouri	ST. LOUIS	MERAMEC	Coal Steam	2104	4	No SCR or Scrubber >25 MW
2010	New Jersey	CAPE MAY	B L ENGLAND	Coal Steam	2378	2	Scrubber
2010	New Jersey	CAPE MAY	B L ENGLAND	Coal Steam	2378	1	No SCR or Scrubber >25 MW
2010	New Jersey	CUMBERLAND	HOWARD DOWN	Coal Steam	2434	10	No SCR or Scrubber <=25 MW
2010	New Jersey	GLOUCESTER	Logan Generating Plant	Coal Steam	10043	GEN1	SCR and Scrubber
2010	New Jersey	HUDSON	HUDSON	Coal Steam	2403	2	SCR and Scrubber
2010	New Jersey	MERCER	MERCER	Coal Steam	2408	1	SCR and Scrubber
2010	New Jersey	MERCER	MERCER	Coal Steam	2408	2	SCR
2010	New Jersey	SALEM	Chambers Cogeneration Limited Partnership	Coal Steam	10566	GEN1	SCR and Scrubber
2010	New Jersey	SALEM	DEEPWATER	Coal Steam	2384	8	No SCR or Scrubber >25 MW
2010	New York	BROOME	GOUDEY	Coal Steam	2526	11	No SCR or Scrubber >25 MW
2010	New York	BROOME	GOUDEY	Coal Steam	2526	12	No SCR or Scrubber >25 MW
2010	New York	BROOME	GOUDEY	Coal Steam	2526	13	No SCR or Scrubber >25 MW
2010	New York	CHAUTAUQUA	DUNKIRK	Coal Steam	2554	1	No SCR or Scrubber >25 MW
2010	New York	CHAUTAUQUA	DUNKIRK	Coal Steam	2554	2	No SCR or Scrubber >25 MW
2010	New York	CHAUTAUQUA	DUNKIRK	Coal Steam	2554	4	No SCR or Scrubber >25 MW
2010	New York	CHAUTAUQUA	DUNKIRK	Coal Steam	2554	3	No SCR or Scrubber >25 MW
2010	New York	CHAUTAUQUA	S A CARLSON	Coal Steam	2682	10	No SCR or Scrubber <=25 MW
2010	New York	CHAUTAUQUA	S A CARLSON	Coal Steam	2682	11	No SCR or Scrubber <=25 MW
2010	New York	CHAUTAUQUA	S A CARLSON	Coal Steam	2682	12	No SCR or Scrubber <=25 MW
2010	New York	CHAUTAUQUA	S A CARLSON	Coal Steam	2682	9	No SCR or Scrubber <=25 MW
2010	New York	ERIE	C R HUNTLEY	Coal Steam	2549	64	No SCR or Scrubber >25 MW
2010	New York	ERIE	C R HUNTLEY	Coal Steam	2549	67	No SCR or Scrubber >25 MW
2010	New York	ERIE	C R HUNTLEY	Coal Steam	2549	68	No SCR or Scrubber >25 MW
2010	New York	JEFFERSON	Fort Drum H T W Cogeneration Facility	Coal Steam	10464	GEN1	Scrubber
2010	New York	MONROE	ROCHESTER 7	Coal Steam	2642	2	No SCR or Scrubber >25 MW
2010	New York	MONROE	ROCHESTER 7	Coal Steam	2642	3	No SCR or Scrubber >25 MW
2010	New York	MONROE	ROCHESTER 7	Coal Steam	2642	4	No SCR or Scrubber >25 MW
2010	New York	NIAGARA	UDG Niagara Falls Cogeneration Facility	Coal Steam	50202	GEN1	Scrubber
2010	New York	NIAGARA	KINTIGH	Coal Steam	6082	1	SCR and Scrubber
2010	New York	ONONDAGA	Fibertek Energy LLC	Coal Steam	50651	GEN1	No SCR or Scrubber >25 MW
2010	New York	ORANGE	DANSKAMMER	Coal Steam	2480	3	No SCR or Scrubber >25 MW
2010	New York	ORANGE	DANSKAMMER	Coal Steam	2480	4	No SCR or Scrubber >25 MW
2010	New York	ROCKLAND	LOVETT	Coal Steam	2629	5	SCR and Scrubber
2010	New York	ROCKLAND	LOVETT	Coal Steam	2629	4	No SCR or Scrubber >25 MW
2010	New York	TOMPKINS	MILLIKEN	Coal Steam	2535	2	Scrubber
2010	New York	TOMPKINS	MILLIKEN	Coal Steam	2535	1	SCR and Scrubber
2010	North Carolina	BLADEN	Cogentrix Elizabethtown	Coal Steam	10380	GEN1	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rata	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
2.25	0.48	1.13	21.0	0.96	0.42	1.00		
17.56	0.68	4.60	211.0	0.95	0.08	0.52		
43.24	2.25	14.42	579.0	0.85	0.10	0.67	X	X
44.64	2.48	14.76	579.0	0.88	0.11	0.66	X	X
0.22	0.05	0.55	2.6	0.96	0.45	5.00		
0.42	0.09	1.05	5.2	0.92	0.45	5.00		
0.50	0.11	1.26	6.2	0.92	0.44	5.00		
44.09	2.81	9.04	580.0	0.87	0.13	0.41		
43.51	2.62	8.92	580.0	0.86	0.12	0.41		
3.84	0.94	0.96	49.0	0.89	0.49	0.50		
1.44	0.32	1.01	17.0	0.96	0.45	1.40		
49.18	8.19	15.25	670.0	0.84	0.33	0.62		
13.33	0.40	2.73	175.0	0.87	0.06	0.41		
21.13	0.63	4.32	275.0	0.88	0.06	0.41		
50.11	6.44	10.52	670.0	0.85	0.26	0.42		
0.54	0.12	1.35	5.0	0.96	0.45	5.00		
15.99	1.75	1.44	222.0	0.82	0.22	0.18		
32.92	1.01	16.46	476.0	0.79	0.06	1.00	X	X
31.96	0.94	15.98	476.0	0.77	0.06	1.00	X	X
10.62	0.78	2.48	132.0	0.92	0.15	0.47	X	X
10.04	0.74	2.34	132.0	0.87	0.15	0.47	X	X
20.86	2.42	7.40	277.0	0.86	0.23	0.71	X	X
25.72	2.37	9.12	336.0	0.87	0.18	0.71	X	X
12.91	2.15	2.26	155.0	0.95	0.33	0.35		
8.78	1.61	6.58	129.0	0.78	0.37	1.50		
1.79	0.33	1.35	23.0	0.89	0.37	1.50		
15.88	0.64	1.22	200.0	0.91	0.08	0.15	X	
47.88	1.48	10.95	600.0	0.91	0.06	0.46	X	
25.25	0.92	1.89	314.7	0.92	0.07	0.15	X	
21.57	0.95	16.18	321.0	0.77	0.09	1.50	X	
13.78	0.41	2.41	187.0	0.84	0.06	0.35		
6.27	1.24	4.70	80.0	0.89	0.40	1.50		
1.75	0.43	1.92	22.0	0.91	0.49	2.20		
1.75	0.43	1.92	22.0	0.91	0.49	2.20		
7.01	0.84	3.86	83.0	0.96	0.24	1.10		
7.13	1.17	3.92	91.0	0.89	0.33	1.10		
7.11	1.17	3.91	92.0	0.88	0.33	1.10		
14.72	2.47	8.10	204.0	0.82	0.34	1.10		
15.17	2.55	8.35	208.0	0.83	0.34	1.10		
0.99	0.22	1.09	12.5	0.91	0.44	2.20		
0.99	0.22	1.09	12.5	0.91	0.44	2.20		
0.99	0.21	1.09	12.5	0.91	0.41	2.20		
0.99	0.21	1.09	12.5	0.91	0.41	2.20		
6.55	2.14	3.60	92.0	0.81	0.65	1.10		
14.39	2.08	7.92	191.0	0.86	0.29	1.10		
14.40	2.08	7.92	196.0	0.84	0.29	1.10		
3.43	0.46	0.19	44.0	0.89	0.27	0.11		
5.06	0.71	2.78	65.0	0.89	0.28	1.10		
5.09	0.54	2.80	65.0	0.89	0.21	1.10		
5.88	0.62	3.23	80.0	0.84	0.21	1.10		
4.00	0.25	0.44	50.0	0.91	0.13	0.22		
47.38	1.42	5.21	675.0	0.80	0.06	0.22		
6.35	1.11	3.49	80.0	0.91	0.35	1.10		
9.41	1.52	5.17	131.2	0.82	0.32	1.10	X	
17.36	2.95	9.55	232.8	0.85	0.34	1.10	X	
15.78	0.47	0.69	192.9	0.93	0.06	0.09	X	
13.61	2.37	7.49	177.0	0.88	0.35	1.10	X	
10.65	1.32	1.20	149.0	0.82	0.25	0.23		
11.23	0.34	0.93	157.0	0.82	0.06	0.17		
1.75	0.63	1.92	22.0	0.91	0.72	2.20		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	North Carolina	BRUNSWICK	Cogentrix Southport	Coal Steam	10378	GEN1	No SCR or Scrubber >25 MW
2010	North Carolina	BRUNSWICK	Cogentrix Southport	Coal Steam	10378	GEN2	No SCR or Scrubber >25 MW
2010	North Carolina	BUNCOMBE	ASHEVILLE	Coal Steam	2706	1	Scrubber
2010	North Carolina	BUNCOMBE	ASHEVILLE	Coal Steam	2706	2	SCR and Scrubber
2010	North Carolina	CABARRUS	Kannapolis Energy Partners	Coal Steam	10626	GEN2	No SCR or Scrubber <=25 MW
2010	North Carolina	CABARRUS	Kannapolis Energy Partners	Coal Steam	10626	GEN3	No SCR or Scrubber <=25 MW
2010	North Carolina	CATAWBA	MARSHALL	Coal Steam	2727	4	Scrubber
2010	North Carolina	CATAWBA	MARSHALL	Coal Steam	2727	1	SCR
2010	North Carolina	CATAWBA	MARSHALL	Coal Steam	2727	2	SCR
2010	North Carolina	CATAWBA	MARSHALL	Coal Steam	2727	3	SCR
2010	North Carolina	CHATHAM	CAPE FEAR	Coal Steam	2708	5	Scrubber
2010	North Carolina	CHATHAM	CAPE FEAR	Coal Steam	2708	6	Scrubber
2010	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	5	SCR and Scrubber
2010	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	1	No SCR or Scrubber >25 MW
2010	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	2	No SCR or Scrubber >25 MW
2010	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	3	No SCR or Scrubber >25 MW
2010	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	4	No SCR or Scrubber >25 MW
2010	North Carolina	DUPLIN	Cogentrix Kenansville	Coal Steam	10381	GEN1	No SCR or Scrubber >25 MW
2010	North Carolina	EDGECOMBE	Dwayne Collier Battle Cogeneration Facilty	Coal Steam	10384	GEN1	Scrubber
2010	North Carolina	EDGECOMBE	Dwayne Collier Battle Cogeneration Facilty	Coal Steam	10384	GEN2	Scrubber
2010	North Carolina	FORSYTH	Tobaccoville Utility Plant	Coal Steam	50221	GEN1	No SCR or Scrubber >25 MW
2010	North Carolina	FORSYTH	Tobaccoville Utility Plant	Coal Steam	50221	GEN2	No SCR or Scrubber >25 MW
2010	North Carolina	GASTON	RIVERBEND	Coal Steam	2732	10	SCR and Scrubber
2010	North Carolina	GASTON	RIVERBEND	Coal Steam	2732	9	SCR and Scrubber
2010	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	3	SCR and Scrubber
2010	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	5	SCR and Scrubber
2010	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	1	SCR
2010	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	2	SCR
2010	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	4	SCR
2010	North Carolina	GASTON	RIVERBEND	Coal Steam	2732	7	No SCR or Scrubber >25 MW
2010	North Carolina	GASTON	RIVERBEND	Coal Steam	2732	8	No SCR or Scrubber >25 MW
2010	North Carolina	HALIFAX	Westmoreland LG&E Partners Roanoke Valley	Coal Steam	54755	GEN2	Scrubber
2010	North Carolina	HALIFAX	Westmoreland LG&E Partners Roanoke Valley	Coal Steam	54035	GEN1	Scrubber
2010	North Carolina	NEW HANOVER	L V SUTTON	Coal Steam	2713	2	SCR
2010	North Carolina	NEW HANOVER	L V SUTTON	Coal Steam	2713	3	SCR
2010	North Carolina	NEW HANOVER	L V SUTTON	Coal Steam	2713	1	No SCR or Scrubber >25 MW
2010	North Carolina	PERSON	ROXBORO	Coal Steam	2712	3A	SCR and Scrubber
2010	North Carolina	PERSON	ROXBORO	Coal Steam	2712	3B	SCR and Scrubber
2010	North Carolina	PERSON	MAYO	Coal Steam	6250	1A	SCR and Scrubber
2010	North Carolina	PERSON	MAYO	Coal Steam	6250	1B	SCR and Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
3.03	0.68	1.66	45.5	0.76	0.45	1.10		
3.03	0.68	1.66	45.5	0.76	0.45	1.10		
18.61	2.97	0.58	193.9	0.96	0.32	0.06		
15.68	1.57	4.63	192.2	0.93	0.20	0.59		
0.50	0.11	0.55	6.3	0.91	0.45	2.20		
1.01	0.23	1.11	12.7	0.91	0.45	2.20		
51.45	6.25	3.90	646.2	0.91	0.24	0.15	X	
24.05	3.21	11.39	384.0	0.72	0.27	0.95	X	
24.05	2.17	11.39	384.0	0.72	0.18	0.95	X	
41.23	3.77	19.53	658.3	0.72	0.18	0.95	X	
12.07	1.19	0.37	140.0	0.96	0.20	0.06		
14.60	1.87	0.45	169.4	0.96	0.26	0.06		
40.90	0.71	14.19	557.3	0.84	0.03	0.69		
3.06	0.13	0.45	38.0	0.92	0.09	0.29		
3.06	0.09	0.45	38.0	0.92	0.06	0.29		
4.91	0.23	0.72	61.0	0.92	0.10	0.29		
4.91	0.25	0.72	61.0	0.92	0.10	0.29		
1.67	0.38	1.83	21.0	0.91	0.45	2.20		
4.29	0.97	0.16	54.0	0.91	0.45	0.07		
4.29	0.97	0.16	54.0	0.91	0.45	0.07		
1.58	0.36	1.19	26.5	0.68	0.45	1.50		
1.58	0.36	1.19	26.5	0.68	0.45	1.50		
11.23	0.39	0.34	130.2	0.96	0.07	0.06		
11.23	0.38	0.34	130.2	0.96	0.07	0.06		
22.37	0.62	0.68	259.4	0.96	0.06	0.06		
21.54	0.78	0.65	264.3	0.93	0.07	0.06		
10.91	1.12	5.17	164.6	0.76	0.21	0.95		
10.91	1.13	5.17	164.6	0.76	0.21	0.95		
17.18	1.76	8.14	274.3	0.72	0.20	0.95		
7.56	0.23	1.11	94.0	0.92	0.06	0.29		
7.56	0.39	1.11	94.0	0.92	0.10	0.29		
4.13	0.93	0.15	52.0	0.91	0.45	0.08		
13.26	1.45	0.73	167.0	0.91	0.22	0.11		
6.65	0.21	4.01	106.0	0.72	0.06	1.21		
31.99	0.98	17.59	410.0	0.89	0.06	1.10		
8.12	0.77	2.21	97.0	0.96	0.19	0.54		
27.57	0.83	1.22	346.1	0.91	0.06	0.09		
27.57	0.83	1.22	346.1	0.91	0.06	0.09		
29.03	0.87	2.18	364.7	0.91	0.06	0.15		
29.03	0.87	2.18	364.7	0.91	0.06	0.15		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	North Carolina	PERSON	ROXBORO	Coal Steam	2712	2	SCR and Scrubber
2010	North Carolina	PERSON	ROXBORO	Coal Steam	2712	4A	SCR
2010	North Carolina	PERSON	ROXBORO	Coal Steam	2712	4B	SCR
2010	North Carolina	PERSON	ROXBORO	Coal Steam	2712	1	SCR
2010	North Carolina	PERSON	Cogentrix Roxboro	Coal Steam	10379	GEN1	No SCR or Scrubber >25 MW
2010	North Carolina	ROBESON	Cogentrix Lumberton	Coal Steam	10382	GEN1	No SCR or Scrubber >25 MW
2010	North Carolina	ROBESON	W H WEATHERSPOON	Coal Steam	2716	1	No SCR or Scrubber >25 MW
2010	North Carolina	ROBESON	W H WEATHERSPOON	Coal Steam	2716	2	No SCR or Scrubber >25 MW
2010	North Carolina	ROBESON	W H WEATHERSPOON	Coal Steam	2716	3	No SCR or Scrubber >25 MW
2010	North Carolina	ROCKINGHAM	DAN RIVER	Coal Steam	2723	3	SCR
2010	North Carolina	ROCKINGHAM	DAN RIVER	Coal Steam	2723	1	No SCR or Scrubber >25 MW
2010	North Carolina	ROCKINGHAM	DAN RIVER	Coal Steam	2723	2	No SCR or Scrubber >25 MW
2010	North Carolina	ROWAN	BUCK	Coal Steam	2720	8	SCR and Scrubber
2010	North Carolina	ROWAN	BUCK	Coal Steam	2720	9	SCR and Scrubber
2010	North Carolina	ROWAN	BUCK	Coal Steam	2720	5	No SCR or Scrubber >25 MW
2010	North Carolina	ROWAN	BUCK	Coal Steam	2720	6	No SCR or Scrubber >25 MW
2010	North Carolina	ROWAN	BUCK	Coal Steam	2720	7	No SCR or Scrubber >25 MW
2010	North Carolina	STOKES	BELEWS CREEK	Coal Steam	8042	1	SCR and Scrubber
2010	North Carolina	STOKES	BELEWS CREEK	Coal Steam	8042	2	SCR and Scrubber
2010	North Carolina	WAYNE	LEE	Coal Steam	2709	3	SCR and Scrubber
2010	North Carolina	WAYNE	LEE	Coal Steam	2709	2	No SCR or Scrubber >25 MW
2010	North Carolina	WAYNE	LEE	Coal Steam	2709	1	No SCR or Scrubber >25 MW
2010	Ohio	ADAMS	J M STUART	Coal Steam	2850	1	SCR and Scrubber
2010	Ohio	ADAMS	J M STUART	Coal Steam	2850	2	SCR and Scrubber
2010	Ohio	ADAMS	J M STUART	Coal Steam	2850	3	SCR and Scrubber
2010	Ohio	ADAMS	J M STUART	Coal Steam	2850	4	SCR and Scrubber
2010	Ohio	ADAMS	KILLEN STATION	Coal Steam	6031	2	SCR and Scrubber
2010	Ohio	ASHTABULA	ASHTABULA	Coal Steam	2835	7	No SCR or Scrubber >25 MW
2010	Ohio	AUGLAIZE	ST MARYS	Coal Steam	2942	5	No SCR or Scrubber <=25 MW
2010	Ohio	AUGLAIZE	ST MARYS	Coal Steam	2942	6	No SCR or Scrubber <=25 MW
2010	Ohio	BELMONT	R E BURGER	Coal Steam	2864	5	No SCR or Scrubber >25 MW
2010	Ohio	BELMONT	R E BURGER	Coal Steam	2864	6	No SCR or Scrubber >25 MW
2010	Ohio	BELMONT	R E BURGER	Coal Steam	2864	7	No SCR or Scrubber >25 MW
2010	Ohio	BELMONT	R E BURGER	Coal Steam	2864	8	No SCR or Scrubber >25 MW
2010	Ohio	BUTLER	HAMILTON	Coal Steam	2917	9	Scrubber
2010	Ohio	BUTLER	HAMILTON	Coal Steam	2917	8	No SCR or Scrubber >25 MW
2010	Ohio	CLERMONT	W H ZIMMER	Coal Steam	6019	1	SCR and Scrubber
2010	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	1	No SCR or Scrubber >25 MW
2010	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	2	No SCR or Scrubber >25 MW
2010	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	3	No SCR or Scrubber >25 MW
2010	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	4	No SCR or Scrubber >25 MW
2010	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	5	No SCR or Scrubber >25 MW
2010	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	6	No SCR or Scrubber >25 MW
2010	Ohio	COSHOCTON	CONESVILLE	Coal Steam	2840	3	SCR and Scrubber
2010	Ohio	COSHOCTON	CONESVILLE	Coal Steam	2840	5	SCR and Scrubber
2010	Ohio	COSHOCTON	CONESVILLE	Coal Steam	2840	6	SCR and Scrubber
2010	Ohio	COSHOCTON	CONESVILLE	Coal Steam	2840	4	SCR and Scrubber
2010	Ohio	CUYAHOGA	LAKE SHORE	Coal Steam	2838	18	No SCR or Scrubber >25 MW
2010	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	4	SCR and Scrubber
2010	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	5	SCR and Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
53.45	1.61	4.04	656.0	0.93	0.06	0.15		
25.33	0.76	15.48	350.0	0.83	0.06	1.22		
25.33	0.76	15.48	350.0	0.83	0.06	1.22		
28.52	0.86	15.69	385.0	0.85	0.06	1.10		
2.99	0.67	1.65	45.0	0.76	0.45	1.10		
1.72	0.55	1.89	22.0	0.89	0.64	2.20		
4.62	0.20	0.35	49.0	0.96	0.09	0.15		
4.51	0.20	0.34	49.0	0.96	0.09	0.15		
6.39	0.15	0.48	78.0	0.93	0.05	0.15		
9.39	1.20	4.45	141.6	0.76	0.26	0.95		
5.39	0.16	0.79	67.0	0.92	0.06	0.29		
5.39	0.16	0.79	67.0	0.92	0.06	0.29		
10.81	0.23	0.33	125.3	0.96	0.04	0.06		
10.81	0.23	0.33	125.3	0.96	0.04	0.06		
3.02	0.15	0.44	37.5	0.92	0.10	0.29		
3.02	0.16	0.44	37.5	0.92	0.11	0.29		
3.06	0.17	0.45	38.0	0.92	0.11	0.29		
81.52	2.43	28.27	1110.6	0.84	0.06	0.69		
81.52	3.28	28.27	1110.6	0.84	0.08	0.69		
17.28	1.79	5.10	249.7	0.79	0.21	0.59		
5.68	0.56	1.54	76.0	0.85	0.20	0.54		
7.09	0.19	0.53	79.0	0.96	0.05	0.15		
42.83	1.60	5.35	572.7	0.85	0.07	0.25	X	X
42.01	1.45	5.25	572.7	0.84	0.07	0.25	X	X
42.88	1.22	5.36	572.7	0.85	0.06	0.25	X	X
42.99	1.19	5.37	572.7	0.86	0.06	0.25	X	X
44.72	1.34	5.59	587.4	0.87	0.06	0.25	X	X
13.19	2.50	5.73	243.0	0.62	0.38	0.87	X	X
0.59	0.13	0.64	6.0	0.96	0.45	2.20		
0.98	0.22	2.46	10.1	0.96	0.45	5.00		
2.38	0.47	1.19	47.0	0.58	0.39	1.00	X	
2.55	0.50	1.28	47.0	0.62	0.39	1.00	X	
8.47	1.67	4.24	156.0	0.62	0.39	1.00	X	
8.47	1.67	4.24	156.0	0.62	0.39	1.00	X	
3.56	0.62	0.66	50.0	0.81	0.35	0.37	X	X
1.65	0.26	0.82	32.1	0.59	0.32	1.00	X	X
92.73	2.78	4.64	1300.0	0.81	0.06	0.10	X	X
6.04	0.81	3.94	94.0	0.73	0.27	1.30	X	X
5.87	0.75	3.83	94.0	0.71	0.25	1.30	X	X
7.53	1.56	5.03	128.0	0.67	0.41	1.33	X	X
9.12	1.25	5.91	150.0	0.69	0.27	1.30	X	X
13.60	2.70	9.11	237.9	0.65	0.40	1.34	X	X
24.36	3.70	16.33	414.1	0.67	0.30	1.34	X	X
12.39	0.41	0.60	161.5	0.88	0.07	0.10	X	X
29.30	0.88	4.03	375.0	0.89	0.06	0.27	X	X
28.33	0.85	3.90	375.0	0.86	0.06	0.27	X	X
56.27	1.65	2.74	763.6	0.84	0.06	0.10	X	X
16.86	1.15	3.82	245.0	0.79	0.14	0.45	X	X
16.80	0.68	1.01	194.8	0.96	0.08	0.12	X	X
17.06	0.69	1.02	197.8	0.96	0.08	0.12	X	X

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	2	SCR and Scrubber
2010	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	3	SCR and Scrubber
2010	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	1	SCR and Scrubber
2010	Ohio	GALLIA	GEN J M GAVIN	Coal Steam	8102	1	SCR and Scrubber
2010	Ohio	GALLIA	GEN J M GAVIN	Coal Steam	8102	2	SCR and Scrubber
2010	Ohio	HAMILTON	MIAMI FORT	Coal Steam	2832	7	SCR and Scrubber
2010	Ohio	HAMILTON	MIAMI FORT	Coal Steam	2832	8	SCR and Scrubber
2010	Ohio	HAMILTON	MIAMI FORT	Coal Steam	2832	6	No SCR or Scrubber >25 MW
2010	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	5	SCR and Scrubber
2010	Ohio	JEFFERSON	CARDINAL	Coal Steam	2828	2	SCR and Scrubber
2010	Ohio	JEFFERSON	CARDINAL	Coal Steam	2828	1	SCR and Scrubber
2010	Ohio	JEFFERSON	CARDINAL	Coal Steam	2828	3	SCR and Scrubber
2010	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	1	SCR
2010	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	4	SCR
2010	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	3	No SCR or Scrubber >25 MW
2010	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	2	No SCR or Scrubber >25 MW
2010	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	6	No SCR or Scrubber >25 MW
2010	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	7	No SCR or Scrubber >25 MW
2010	Ohio	LAKE	EASTLAKE	Coal Steam	2837	5	Scrubber
2010	Ohio	LAKE	EASTLAKE	Coal Steam	2837	1	No SCR or Scrubber >25 MW
2010	Ohio	LAKE	EASTLAKE	Coal Steam	2837	2	No SCR or Scrubber >25 MW
2010	Ohio	LAKE	EASTLAKE	Coal Steam	2837	3	No SCR or Scrubber >25 MW
2010	Ohio	LAKE	EASTLAKE	Coal Steam	2837	4	No SCR or Scrubber >25 MW
2010	Ohio	LAKE	PAINESVILLE	Coal Steam	2936	3	No SCR or Scrubber <=25 MW
2010	Ohio	LAKE	PAINESVILLE	Coal Steam	2936	5	No SCR or Scrubber <=25 MW
2010	Ohio	LAKE	PAINESVILLE	Coal Steam	2936	4	No SCR or Scrubber <=25 MW
2010	Ohio	LORAIN	AVON LAKE	Coal Steam	2836	12	SCR and Scrubber
2010	Ohio	LORAIN	AVON LAKE	Coal Steam	2836	10	No SCR or Scrubber >25 MW
2010	Ohio	LUCAS	BAY SHORE	Coal Steam	2878	2	No SCR or Scrubber >25 MW
2010	Ohio	LUCAS	BAY SHORE	Coal Steam	2878	3	No SCR or Scrubber >25 MW
2010	Ohio	LUCAS	BAY SHORE	Coal Steam	2878	4	No SCR or Scrubber >25 MW
2010	Ohio	MIAMI	Piqua	Coal Steam	2937	10	No SCR or Scrubber <=25 MW
2010	Ohio	MIAMI	PIQUA	Coal Steam	2937	4	No SCR or Scrubber <=25 MW
2010	Ohio	MIAMI	PIQUA	Coal Steam	2937	5	No SCR or Scrubber <=25 MW
2010	Ohio	MIAMI	PIQUA	Coal Steam	2937	6	No SCR or Scrubber <=25 MW
2010	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-2	No SCR or Scrubber >25 MW
2010	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-1	No SCR or Scrubber >25 MW
2010	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-3	No SCR or Scrubber >25 MW
2010	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-4	No SCR or Scrubber >25 MW
2010	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-5	No SCR or Scrubber >25 MW
2010	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-6	No SCR or Scrubber >25 MW
2010	Ohio	PICKAWAY	PICWAY	Coal Steam	2843	9	No SCR or Scrubber >25 MW
2010	Ohio	RICHLAND	SHELBY	Coal Steam	2943	1	No SCR or Scrubber <=25 MW
2010	Ohio	RICHLAND	SHELBY	Coal Steam	2943	2	No SCR or Scrubber <=25 MW
2010	Ohio	RICHLAND	SHELBY	Coal Steam	2943	4	No SCR or Scrubber <=25 MW
2010	Ohio	TRUMBULL	NILES	Coal Steam	2861	1	Scrubber
2010	Ohio	TUSCARAWAS	DOVER	Coal Steam	2914	4	No SCR or Scrubber <=25 MW
2010	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	1	SCR and Scrubber
2010	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	2	SCR and Scrubber
2010	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	3	SCR and Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
17.31	0.70	1.04	200.7	0.96	0.08	0.12	X	X
17.31	0.70	1.04	200.7	0.96	0.08	0.12	X	X
18.07	0.73	1.08	209.5	0.96	0.08	0.12	X	X
96.13	3.00	6.49	1300.0	0.84	0.06	0.13	X	X
95.56	2.75	6.45	1300.0	0.84	0.06	0.13	X	X
38.84	1.15	4.85	489.5	0.91	0.06	0.25	X	X
38.99	1.17	2.34	489.5	0.91	0.06	0.12	X	X
11.28	1.57	7.75	163.0	0.79	0.28	1.37	X	X
22.41	0.67	3.02	294.5	0.87	0.06	0.27	X	X
46.68	1.36	2.80	572.7	0.93	0.06	0.12	X	X
39.52	1.20	4.94	587.4	0.77	0.06	0.25	X	X
49.13	1.47	6.14	616.8	0.91	0.06	0.25	X	X
13.94	0.33	10.46	180.0	0.88	0.05	1.50	X	X
13.82	0.51	10.36	180.0	0.88	0.07	1.50	X	X
12.05	2.18	9.03	180.0	0.76	0.36	1.50	X	X
10.54	1.62	7.91	180.0	0.67	0.31	1.50	X	X
40.45	6.30	29.53	600.0	0.77	0.31	1.46	X	X
40.12	4.86	29.29	600.0	0.76	0.24	1.46	X	X
40.91	3.40	5.11	584.5	0.80	0.17	0.25	X	X
6.92	1.34	3.01	129.0	0.61	0.39	0.87	X	X
6.64	1.15	2.88	129.0	0.59	0.35	0.87	X	X
6.56	0.56	3.28	129.0	0.58	0.17	1.00	X	X
12.08	1.71	5.24	238.0	0.58	0.28	0.87	X	X
1.11	0.25	2.77	13.1	0.96	0.45	5.00	X	X
1.33	0.30	3.33	16.7	0.91	0.45	5.00	X	X
2.05	0.46	5.13	24.3	0.96	0.45	5.00	X	X
46.48	1.39	5.81	583.5	0.91	0.06	0.25	X	X
5.57	0.67	2.78	95.0	0.67	0.24	1.00	X	X
7.75	1.22	5.17	134.0	0.66	0.32	1.33		
8.05	2.12	5.37	142.0	0.65	0.53	1.33		
13.06	1.48	8.46	213.0	0.70	0.23	1.30		
0.07	0.02	0.10	0.8	0.96	0.45	3.00		
1.02	0.23	1.53	12.1	0.96	0.45	3.00		
1.02	0.23	1.53	12.1	0.96	0.45	3.00		
1.59	0.36	2.38	19.9	0.91	0.45	3.00		
3.70	0.51	1.85	55.0	0.77	0.28	1.00	X	
3.29	0.46	1.65	58.0	0.65	0.28	1.00	X	
3.29	0.43	1.64	63.0	0.60	0.26	1.00	X	
3.23	0.42	1.61	63.0	0.58	0.26	1.00	X	
3.35	0.43	1.68	63.0	0.61	0.26	1.00	X	
3.42	0.44	1.71	63.0	0.62	0.26	1.00	X	
4.89	1.02	2.44	90.0	0.62	0.42	1.00		
0.48	0.11	1.21	6.0	0.91	0.45	5.00		
0.48	0.11	1.21	6.0	0.91	0.45	5.00		
0.60	0.13	1.49	7.1	0.96	0.45	5.00		
5.37	1.26	0.59	69.0	0.89	0.47	0.22		
1.21	0.27	1.81	15.1	0.91	0.45	3.00		
14.62	0.50	0.88	186.0	0.90	0.07	0.12	X	
14.64	0.51	0.88	186.0	0.90	0.07	0.12	X	
15.33	0.53	0.92	200.7	0.87	0.07	0.12	X	

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	4	SCR and Scrubber
2010	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	5	SCR and Scrubber
2010	Ohio	WAYNE	ORRVILLE	Coal Steam	2935	13	No SCR or Scrubber >25 MW
2010	Ohio	WAYNE	ORRVILLE	Coal Steam	2935	12	No SCR or Scrubber >25 MW
2010	Ohio	WAYNE	ORRVILLE	Coal Steam	2935	10	No SCR or Scrubber <=25 MW
2010	Ohio	WAYNE	ORRVILLE	Coal Steam	2935	11	No SCR or Scrubber <=25 MW
2010	Pennsylvania	ALLEGHENY	CHESWICK	Coal Steam	8226	1	SCR and Scrubber
2010	Pennsylvania	ARMSTRONG	KEYSTONE	Coal Steam	3136	1	SCR and Scrubber
2010	Pennsylvania	ARMSTRONG	KEYSTONE	Coal Steam	3136	2	SCR and Scrubber
2010	Pennsylvania	ARMSTRONG	ARMSTRONG	Coal Steam	3178	2	No SCR or Scrubber >25 MW
2010	Pennsylvania	ARMSTRONG	ARMSTRONG	Coal Steam	3178	1	No SCR or Scrubber >25 MW
2010	Pennsylvania	BEAVER	AES BV Partners Beaver Valley	Coal Steam	10676	GEN2	Scrubber
2010	Pennsylvania	BEAVER	AES BV Partners Beaver Valley	Coal Steam	10676	GEN3	Scrubber
2010	Pennsylvania	BEAVER	BRUCE MANSFIELD	Coal Steam	6094	1	SCR and Scrubber
2010	Pennsylvania	BEAVER	BRUCE MANSFIELD	Coal Steam	6094	2	SCR and Scrubber
2010	Pennsylvania	BEAVER	BRUCE MANSFIELD	Coal Steam	6094	3	SCR and Scrubber
2010	Pennsylvania	CAMBRIA	Ebensburg Power Company	Coal Steam	10603	GEN1	Scrubber
2010	Pennsylvania	CAMBRIA	Cambria CoGen	Coal Steam	10641	GEN1	No SCR or Scrubber >25 MW
2010	Pennsylvania	CARBON	Panther Creek Energy Facility	Coal Steam	50776	GEN1	Scrubber
2010	Pennsylvania	CHESTER	CROMBY	Coal Steam	3159	1	Scrubber
2010	Pennsylvania	CLARION	Piney Creek Project	Coal Steam	54144	GEN1	Scrubber
2010	Pennsylvania	CLEARFIELD	SHAWVILLE	Coal Steam	3131	2	SCR and Scrubber
2010	Pennsylvania	CLEARFIELD	SHAWVILLE	Coal Steam	3131	1	No SCR or Scrubber >25 MW
2010	Pennsylvania	CLEARFIELD	SHAWVILLE	Coal Steam	3131	3	No SCR or Scrubber >25 MW
2010	Pennsylvania	CLEARFIELD	SHAWVILLE	Coal Steam	3131	4	No SCR or Scrubber >25 MW
2010	Pennsylvania	DELAWARE	Chester Operations	Coal Steam	50410	T5	Scrubber
2010	Pennsylvania	DELAWARE	EDDYSTONE	Coal Steam	3161	1	SCR and Scrubber
2010	Pennsylvania	DELAWARE	EDDYSTONE	Coal Steam	3161	2	SCR and Scrubber
2010	Pennsylvania	ERIE	General Electric Erie PA Power Station	Coal Steam	50358	STM2	No SCR or Scrubber <=25 MW
2010	Pennsylvania	ERIE	General Electric Erie PA Power Station	Coal Steam	50358	STM3	No SCR or Scrubber <=25 MW
2010	Pennsylvania	ERIE	General Electric Erie PA Power Station	Coal Steam	50358	STM4	No SCR or Scrubber <=25 MW
2010	Pennsylvania	GREENE	HATFIELD'S FERRY	Coal Steam	3179	2	SCR and Scrubber
2010	Pennsylvania	GREENE	HATFIELD'S FERRY	Coal Steam	3179	3	SCR and Scrubber
2010	Pennsylvania	GREENE	HATFIELD'S FERRY	Coal Steam	3179	1	No SCR or Scrubber >25 MW
2010	Pennsylvania	INDIANA	HOMER CITY	Coal Steam	3122	2	SCR and Scrubber
2010	Pennsylvania	INDIANA	HOMER CITY	Coal Steam	3122	1	SCR and Scrubber
2010	Pennsylvania	INDIANA	HOMER CITY	Coal Steam	3122	3	SCR and Scrubber
2010	Pennsylvania	INDIANA	CONEMAUGH	Coal Steam	3118	1	SCR and Scrubber
2010	Pennsylvania	INDIANA	CONEMAUGH	Coal Steam	3118	2	SCR and Scrubber
2010	Pennsylvania	LAWRENCE	NEW CASTLE	Coal Steam	3138	3	No SCR or Scrubber >25 MW
2010	Pennsylvania	LAWRENCE	NEW CASTLE	Coal Steam	3138	4	No SCR or Scrubber >25 MW
2010	Pennsylvania	LAWRENCE	NEW CASTLE	Coal Steam	3138	5	No SCR or Scrubber >25 MW
2010	Pennsylvenia	MONTOUR	MONTOUR	Coal Steam	3149	2	SCR and Scrubber
2010	Pennsylvenia	MONTOUR	MONTOUR	Coal Steam	3149	1	SCR and Scrubber
2010	Pennsylvania	NORTHAMPTON	Northhampton Generating Company L P	Coal Steam	50888	GEN1	Scrubber
2010	Pennsylvania	NORTHAMPTON	PORTLAND	Coal Steam	3113	2	No SCR or Scrubber >25 MW
2010	Pennsylvania	NORTHUMBERLAN D	Foster Wheeler Mt Carmel Incorporated	Coal Steam	10343	TG1	Scrubber
2010	Pennsylvania	SCHUYLKILL	Wheeler Frackville Energy Company Inc	Coal Steam	50879	GEN1	Scrubber
2010	Pennsylvania	SCHUYLKILL	Kline Township Cogen Facilty	Coal Steam	50039	GEN1	Scrubber
2010	Pennsylvania	SCHUYLKILL	St Nicholas Cogeneration Project	Coal Steam	54634	SNCP	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
15.19	0.52	0.91	200.7	0.86	0.07	0.12	X	
40.27	1.39	5.03	562.9	0.82	0.07	0.25	X	
1.50	0.34	0.75	30.0	0.57	0.45	1.00		
1.64	0.37	0.82	32.0	0.59	0.45	1.00		
1.11	0.25	2.77	10.3	0.96	0.45	5.00		
1.11	0.25	2.77	10.3	0.96	0.45	5.00		
42.40	1.27	5.30	550.2	0.88	0.06	0.25	X	X
60.30	1.48	6.01	832.2	0.83	0.05	0.20	X	X
59.24	1.47	5.90	832.2	0.81	0.05	0.20	X	X
10.88	1.32	7.29	171.0	0.73	0.24	1.34	X	X
10.67	1.40	7.14	172.0	0.71	0.26	1.34	X	X
2.29	0.47	0.42	28.9	0.91	0.41	0.37	X	X
7.79	1.61	1.42	98.1	0.91	0.41	0.37	X	X
53.22	1.62	6.31	781.0	0.78	0.06	0.24	X	X
53.17	1.57	6.30	785.0	0.77	0.06	0.24	X	X
52.89	1.68	7.27	805.0	0.75	0.06	0.27	X	X
4.39	0.20	0.48	51.0	0.96	0.09	0.22	X	
6.96	0.48	5.22	87.0	0.91	0.14	1.50	X	
8.91	0.54	0.73	82.6	0.96	0.12	0.16		
10.49	1.30	1.63	144.0	0.83	0.25	0.31	X	
3.45	0.27	0.56	31.9	0.96	0.16	0.33		
10.25	0.31	1.35	125.0	0.94	0.06	0.26		
7.59	1.84	4.17	122.0	0.71	0.48	1.10		
12.49	2.47	6.87	175.0	0.82	0.40	1.10		
12.53	2.48	6.89	175.0	0.82	0.40	1.10		
0.69	0.04	0.36	8.0	0.96	0.12	1.04	X	
22.18	0.71	1.61	279.0	0.91	0.06	0.15	X	
24.39	0.69	1.77	302.0	0.92	0.06	0.15	X	
0.08	0.02	0.09	1.1	0.91	0.45	2.20		
0.16	0.04	0.17	2.0	0.91	0.45	2.20		
0.16	0.04	0.17	2.0	0.91	0.45	2.20		
37.00	1.11	2.22	489.5	0.86	0.06	0.12	X	X
36.88	1.11	2.21	489.5	0.86	0.06	0.12	X	X
30.94	4.60	20.71	500.0	0.71	0.30	1.34	X	X
41.09	1.44	4.09	601.1	0.78	0.07	0.20	X	
44.33	1.45	4.42	607.0	0.83	0.07	0.20	X	
49.78	1.49	2.74	650.0	0.87	0.06	0.11	X	
60.33	1.83	1.33	850.0	0.81	0.06	0.04	X	
59.83	1.77	1.32	850.0	0.80	0.06	0.04	X	
5.54	0.99	4.16	98.0	0.65	0.36	1.50	X	X
5.50	0.91	4.13	98.0	0.64	0.33	1.50	X	X
7.63	1.40	5.72	137.0	0.64	0.37	1.50	X	X
50.55	1.73	5.04	729.4	0.79	0.07	0.20		
50.11	1.58	4.99	744.0	0.77	0.06	0.20		
8.79	0.53	0.48	102.0	0.96	0.12	0.11		
14.18	2.16	7.80	243.0	0.67	0.30	1.10		
3.46	0.18	0.28	40.4	0.96	0.10	0.16		
3.66	0.22	0.60	42.5	0.96	0.12	0.33		
4.27	0.26	0.70	49.6	0.96	0.12	0.33		
7.29	0.24	5.47	101.0	0.82	0.07	1.50		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Pennsylvania	SNYDER	SUNBURY	Coal Steam	3152	4	No SCR or Scrubber >25 MW
2010	Pennsylvania	VENANGO	Scrubgrass Generating Company L P	Coal Steam	50974	GEN1	Scrubber
2010	Pennsylvania	WARREN	WARREN	Coal Steam	3132	1	No SCR or Scrubber >25 MW
2010	Pennsylvania	WARREN	WARREN	Coal Steam	3132	2	No SCR or Scrubber >25 MW
2010	Pennsylvania	WARREN	WARREN	Coal Steam	3132	3	No SCR or Scrubber >25 MW
2010	Pennsylvania	WARREN	WARREN	Coal Steam	3132	4	No SCR or Scrubber >25 MW
2010	Pennsylvania	WASHINGTON	ELRAMA	Coal Steam	3098	1	Scrubber
2010	Pennsylvania	WASHINGTON	ELRAMA	Coal Steam	3098	2	Scrubber
2010	Pennsylvania	WASHINGTON	ELRAMA	Coal Steam	3098	3	Scrubber
2010	Pennsylvania	WASHINGTON	ELRAMA	Coal Steam	3098	4	Scrubber
2010	Pennsylvania	WASHINGTON	MITCHELL	Coal Steam	3181	33	SCR and Scrubber
2010	Pennsylvania	YORK	BRUNNER ISLAND	Coal Steam	3140	1	No SCR or Scrubber >25 MW
2010	Pennsylvania	YORK	BRUNNER ISLAND	Coal Steam	3140	2	No SCR or Scrubber >25 MW
2010	Pennsylvania	YORK	BRUNNER ISLAND	Coal Steam	3140	3	No SCR or Scrubber >25 MW
2010	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN3	No SCR or Scrubber <=25 MW
2010	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN2	No SCR or Scrubber <=25 MW
2010	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN1	No SCR or Scrubber <=25 MW
2010	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN4	No SCR or Scrubber <=25 MW
2010	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN6	No SCR or Scrubber <=25 MW
2010	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN5	No SCR or Scrubber <=25 MW
2010	South Carolina	AIKEN	USDOE SRS (D-Area)	Coal Steam	7652	1	No SCR or Scrubber >25 MW
2010	South Carolina	AIKEN	URQUHART	Coal Steam	3295	URQ3	No SCR or Scrubber >25 MW
2010	South Carolina	ANDERSON	W S LEE	Coal Steam	3264	1	No SCR or Scrubber >25 MW
2010	South Carolina	ANDERSON	W S LEE	Coal Steam	3264	2	No SCR or Scrubber >25 MW
2010	South Carolina	ANDERSON	W S LEE	Coal Steam	3264	3	No SCR or Scrubber >25 MW
2010	South Carolina	BERKELEY	CROSS	Coal Steam	130	2	SCR and Scrubber
2010	South Carolina	BERKELEY	CROSS	Coal Steam	130	1	SCR and Scrubber
2010	South Carolina	BERKELEY	WILLIAMS	Coal Steam	3298	WIL1	SCR
2010	South Carolina	BERKELEY	JEFFERIES	Coal Steam	3319	3	No SCR or Scrubber >25 MW
2010	South Carolina	BERKELEY	JEFFERIES	Coal Steam	3319	4	No SCR or Scrubber >25 MW
2010	South Carolina	CHARLESTON	Cogen South	Coal Steam	7737	1	Scrubber
2010	South Carolina	COLLETON	CANADYS STEAM	Coal Steam	3280	CAN1	No SCR or Scrubber >25 MW
2010	South Carolina	COLLETON	CANADYS STEAM	Coal Steam	3280	CAN2	No SCR or Scrubber >25 MW
2010	South Carolina	COLLETON	CANADYS STEAM	Coal Steam	3280	CAN3	No SCR or Scrubber >25 MW
2010	South Carolina	DARLINGTON	H B ROBINSON	Coal Steam	3251	1	No SCR or Scrubber >25 MW
2010	South Carolina	GEORGETOWN	WINYAH	Coal Steam	6249	1	SCR and Scrubber
2010	South Carolina	GEORGETOWN	WINYAH	Coal Steam	6249	2	SCR and Scrubber
2010	South Carolina	GEORGETOWN	WINYAH	Coal Steam	6249	3	SCR and Scrubber
2010	South Carolina	GEORGETOWN	WINYAH	Coal Steam	6249	4	SCR and Scrubber
2010	South Carolina	HORRY	DOLPHUS M GRAINGER	Coal Steam	3317	1	No SCR or Scrubber >25 MW
2010	South Carolina	HORRY	DOLPHUS M GRAINGER	Coal Steam	3317	2	No SCR or Scrubber >25 MW
2010	South Carolina	LEXINGTON	MCMEEKIN	Coal Steam	3287	MCM1	No SCR or Scrubber >25 MW
2010	South Carolina	LEXINGTON	MCMEEKIN	Coal Steam	3287	MCM2	No SCR or Scrubber >25 MW
2010	South Carolina	ORANGEBURG	COPE	Coal Steam	7210	COP1	Scrubber
2010	South Carolina	RICHLAND	WATEREE	Coal Steam	3297	WAT1	SCR
2010	South Carolina	RICHLAND	WATEREE	Coal Steam	3297	WAT2	SCR
2010	Tennessee	ANDERSON	BULL RUN	Coal Steam	3396	1	SCR and Scrubber
2010	Tennessee	HAWKINS	JOHN SEVIER	Coal Steam	3405	1	No SCR or Scrubber >25 MW
2010	Tennessee	HAWKINS	JOHN SEVIER	Coal Steam	3405	2	No SCR or Scrubber >25 MW
2010	Tennessee	HAWKINS	JOHN SEVIER	Coal Steam	3405	3	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
7.77	1.17	4.27	128.0	0.69	0.30	1.10		
8.41	0.51	1.92	82.0	0.96	0.12	0.46		
2.07	0.47	2.27	20.5	0.96	0.45	2.20		
2.07	0.47	2.27	20.5	0.96	0.45	2.20		
2.21	0.50	2.43	20.5	0.96	0.45	2.20		
1.73	0.39	1.90	20.5	0.96	0.45	2.20		
7.27	1.12	0.88	97.0	0.86	0.31	0.24	X	X
7.01	1.08	0.85	97.0	0.83	0.31	0.24	X	X
8.91	1.37	1.08	109.0	0.93	0.31	0.24	X	X
12.42	1.91	1.50	171.0	0.83	0.31	0.24	X	X
21.41	0.53	2.94	275.0	0.89	0.05	0.27	X	X
22.64	4.09	16.98	321.0	0.81	0.36	1.50	X	
25.47	4.60	14.01	378.0	0.77	0.36	1.10	X	
48.31	9.04	26.57	735.0	0.75	0.37	1.10	X	
0.16	0.03	0.17	1.9	0.96	0.37	2.20	X	
0.18	0.05	0.20	2.2	0.96	0.57	2.20	X	
0.19	0.05	0.20	2.2	0.96	0.57	2.20	X	
0.22	0.04	0.24	2.7	0.91	0.37	2.20	X	
1.04	0.18	1.15	14.0	0.85	0.34	2.20	X	
1.25	0.17	1.37	16.0	0.89	0.27	2.20	X	
2.11	0.47	1.58	35.0	0.69	0.45	1.50		
6.68	1.15	3.68	100.0	0.76	0.35	1.10		
6.40	1.26	4.01	100.0	0.73	0.39	1.25		
6.09	1.26	3.82	100.0	0.70	0.41	1.25		
12.28	1.42	7.26	170.0	0.82	0.23	1.18		
42.11	1.26	7.80	540.0	0.89	0.06	0.37		
44.85	1.35	2.59	560.0	0.91	0.06	0.12		
39.93	1.22	21.96	560.0	0.81	0.06	1.10		
9.24	2.17	5.08	153.0	0.69	0.47	1.10		
11.15	2.42	6.13	153.0	0.83	0.43	1.10		
4.40	0.99	0.17	55.0	0.91	0.45	0.08		
8.78	1.51	4.83	125.0	0.80	0.34	1.10		
8.68	1.91	4.77	125.0	0.79	0.44	1.10		
13.77	2.86	7.57	180.0	0.87	0.42	1.10		
11.96	1.68	6.58	174.0	0.78	0.28	1.10		
20.88	0.63	1.83	265.0	0.90	0.06	0.17		
20.88	0.63	1.83	265.0	0.90	0.06	0.17		
21.05	0.63	3.95	270.0	0.89	0.06	0.37		
21.19	0.64	1.59	270.0	0.90	0.06	0.15		
6.04	1.35	3.32	85.0	0.81	0.45	1.10		
6.06	1.67	3.33	85.0	0.81	0.55	1.10		
8.99	1.76	4.94	126.0	0.81	0.39	1.10		
8.97	1.59	4.94	126.0	0.81	0.35	1.10		
27.08	3.28	1.49	385.0	0.80	0.24	0.11		
27.31	0.82	15.02	350.0	0.89	0.06	1.10		
27.30	0.80	15.02	350.0	0.89	0.06	1.10		
69.26	2.08	8.66	849.8	0.93	0.06	0.25	X	X
12.26	2.53	8.64	176.0	0.80	0.41	1.41		
12.30	2.54	8.67	176.0	0.80	0.41	1.41		
11.91	2.48	8.40	176.0	0.77	0.42	1.41		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Tennessee	HAWKINS	JOHN SEVIER	Coal Steam	3405	4	No SCR or Scrubber >25 MW
2010	Tennessee	HUMPHREYS	JOHNSONVILLE	Coal Steam	3406	10	SCR
2010	Tennessee	HUMPHREYS	JOHNSONVILLE	Coal Steam	3406	9	SCR
2010	Tennessee	ROANE	KINGSTON	Coal Steam	3407	1	SCR
2010	Tennessee	ROANE	KINGSTON	Coal Steam	3407	2	SCR
2010	Tennessee	ROANE	KINGSTON	Coal Steam	3407	3	SCR
2010	Tennessee	ROANE	KINGSTON	Coal Steam	3407	4	SCR
2010	Tennessee	ROANE	KINGSTON	Coal Steam	3407	5	SCR
2010	Tennessee	ROANE	KINGSTON	Coal Steam	3407	6	SCR
2010	Tennessee	ROANE	KINGSTON	Coal Steam	3407	7	SCR
2010	Tennessee	ROANE	KINGSTON	Coal Steam	3407	8	SCR
2010	Tennessee	ROANE	KINGSTON	Coal Steam	3407	9	No SCR or Scrubber >25 MW
2010	Tennessee	SHELBY	ALLEN	Coal Steam	3393	1	SCR
2010	Tennessee	SHELBY	ALLEN	Coal Steam	3393	2	SCR
2010	Tennessee	SHELBY	ALLEN	Coal Steam	3393	3	SCR
2010	Tennessee	STEWART	CUMBERLAND	Coal Steam	3399	2	SCR and Scrubber
2010	Tennessee	STEWART	CUMBERLAND	Coal Steam	3399	1	SCR and Scrubber
2010	Tennessee	SUMNER	GALLATIN	Coal Steam	3403	1	No SCR or Scrubber >25 MW
2010	Tennessee	SUMNER	GALLATIN	Coal Steam	3403	2	No SCR or Scrubber >25 MW
2010	Tennessee	SUMNER	GALLATIN	Coal Steam	3403	3	No SCR or Scrubber >25 MW
2010	Tennessee	SUMNER	GALLATIN	Coal Steam	3403	4	No SCR or Scrubber >25 MW
2010	Texas	ATASCOSA	SAN MIGUEL	Coal Steam	6183	SM-1	Scrubber
2010	Texas	BEXAR	J K SPRUCE	Coal Steam	7097	BLR1	Scrubber
2010	Texas	BEXAR	J T DEELY	Coal Steam	6181	1	No SCR or Scrubber >25 MW
2010	Texas	BEXAR	J T DEELY	Coal Steam	6181	2	No SCR or Scrubber >25 MW
2010	Texas	FAYETTE	SAM SEYMOUR	Coal Steam	6179	3	Scrubber
2010	Texas	FAYETTE	SAM SEYMOUR	Coal Steam	6179	1	No SCR or Scrubber >25 MW
2010	Texas	FAYETTE	SAM SEYMOUR	Coal Steam	6179	2	No SCR or Scrubber >25 MW
2010	Texas	FORT BEND	W A PARISH	Coal Steam	3470	WAP8	SCR and Scrubber
2010	Texas	FORT BEND	W A PARISH	Coal Steam	3470	WAP7	SCR
2010	Texas	FORT BEND	W A PARISH	Coal Steam	3470	WAP5	SCR
2010	Texas	FORT BEND	W A PARISH	Coal Steam	3470	WAP6	SCR
2010	Texas	FREESTONE	BIG BROWN	Coal Steam	3497	1	No SCR or Scrubber >25 MW
2010	Texas	FREESTONE	BIG BROWN	Coal Steam	3497	2	No SCR or Scrubber >25 MW
2010	Texas	GOLIAD	COLETO CREEK	Coal Steam	6178	1	No SCR or Scrubber >25 MW
2010	Texas	GRAY	Celanese	Coal Steam	7678	2	No SCR or Scrubber >25 MW
2010	Texas	GRIMES	GIBBONS CREEK	Coal Steam	6136	1	Scrubber
2010	Texas	HARRISON	PIRKEY	Coal Steam	7902	1	Scrubber
2010	Texas	LAMB	TOLK STATION	Coal Steam	6194	171B	No SCR or Scrubber >25 MW
2010	Texas	LAMB	TOLK STATION	Coal Steam	6194	172B	No SCR or Scrubber >25 MW
2010	Texas	LIMESTONE	LIMESTONE	Coal Steam	298	LIM2	Scrubber
2010	Texas	LIMESTONE	LIMESTONE	Coal Steam	298	LIM1	Scrubber
2010	Texas	MILAM	SANDOW	Coal Steam	6648	4	Scrubber
2010	Texas	POTTER	HARRINGTON STATION	Coal Steam	6193	061B	No SCR or Scrubber >25 MW
2010	Texas	POTTER	HARRINGTON STATION	Coal Steam	6193	062B	No SCR or Scrubber >25 MW
2010	Texas	POTTER	HARRINGTON STATION	Coal Steam	6193	063B	No SCR or Scrubber >25 MW
2010	Texas	ROBERTSON	TNP ONE	Coal Steam	7030	U1	Scrubber
2010	Texas	ROBERTSON	TNP ONE	Coal Steam	7030	U2	Scrubber
2010	Texas	RUSK	MARTIN LAKE	Coal Steam	6146	1	Scrubber
2010	Texas	RUSK	MARTIN LAKE	Coal Steam	6146	2	Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
12.24	2.55	8.63	176.0	0.79	0.42	1.41		
9.74	0.29	4.87	141.0	0.79	0.06	1.00		
10.95	0.33	5.47	141.0	0.89	0.06	1.00		
9.64	0.33	6.45	136.0	0.81	0.07	1.34	X	X
9.64	0.33	6.45	136.0	0.81	0.07	1.34	X	X
9.64	0.33	6.45	136.0	0.81	0.07	1.34	X	X
9.64	0.33	6.45	136.0	0.81	0.07	1.34	X	X
12.62	0.43	8.45	178.0	0.81	0.07	1.34	X	X
12.62	0.31	8.45	178.0	0.81	0.05	1.34	X	X
12.62	0.31	8.45	178.0	0.81	0.05	1.34	X	X
12.62	0.31	8.45	178.0	0.81	0.05	1.34	X	X
11.30	2.30	7.43	178.0	0.72	0.41	1.32	X	X
18.54	0.66	6.95	248.0	0.85	0.07	0.75		
19.69	0.71	7.13	248.0	0.91	0.07	0.72		
19.84	0.69	7.18	248.0	0.91	0.07	0.72		
95.49	3.75	11.94	1224.0	0.89	0.08	0.25		
96.58	2.01	12.07	1238.0	0.89	0.04	0.25		
16.63	2.36	10.71	225.0	0.84	0.28	1.29		
16.85	2.39	10.85	225.0	0.85	0.28	1.29		
19.33	3.38	12.45	263.0	0.84	0.35	1.29		
19.11	3.34	12.31	263.0	0.83	0.35	1.29		
34.49	4.16	5.70	391.0	0.96	0.24	0.33		
35.23	2.43	4.35	530.0	0.76	0.14	0.25		
31.51	2.06	10.84	405.0	0.89	0.13	0.69		
30.99	2.03	10.66	405.0	0.87	0.13	0.69		
33.64	2.41	3.51	435.0	0.88	0.14	0.21		
45.25	4.07	15.43	580.0	0.89	0.18	0.68		
45.22	3.12	15.42	580.0	0.89	0.14	0.68		
39.31	1.18	5.31	555.0	0.81	0.06	0.27		
37.79	1.15	17.72	560.0	0.77	0.06	0.94		
42.78	1.39	20.06	650.0	0.75	0.07	0.94		
43.65	1.18	20.47	650.0	0.77	0.05	0.94		
46.29	3.57	23.15	575.0	0.92	0.15	1.00		
47.29	3.73	23.65	575.0	0.94	0.16	1.00		
47.35	4.26	16.10	632.0	0.86	0.18	0.68		
2.32	0.52	1.16	26.0	0.96	0.45	1.00		
31.96	1.87	1.34	405.0	0.90	0.12	0.08		
48.51	4.63	17.59	580.0	0.95	0.19	0.73		
40.05	2.70	11.49	540.0	0.85	0.13	0.57		
36.47	2.51	10.47	540.0	0.77	0.14	0.57		
56.44	4.80	2.37	720.0	0.89	0.17	0.08		
57.67	4.89	9.53	720.0	0.91	0.17	0.33		
44.28	5.49	7.32	545.0	0.93	0.25	0.33		
25.98	1.78	7.11	346.0	0.86	0.14	0.55		
27.50	1.91	7.89	360.0	0.87	0.14	0.57		
26.89	1.85	7.72	360.0	0.85	0.14	0.57		
12.54	1.23	0.84	150.0	0.95	0.20	0.13		
12.45	1.09	0.83	150.0	0.95	0.18	0.13		
59.77	8.48	9.88	750.0	0.91	0.28	0.33		
63.11	5.23	10.43	750.0	0.96	0.17	0.33		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Texas	RUSK	MARTIN LAKE	Coal Steam	6146	3	Scrubber
2010	Texas	TITUS	MONTICELLO	Coal Steam	6147	3	Scrubber
2010	Texas	TITUS	WELSH	Coal Steam	6139	2	SCR
2010	Texas	TITUS	WELSH	Coal Steam	6139	3	SCR
2010	Texas	TITUS	WELSH	Coal Steam	6139	1	No SCR or Scrubber >25 MW
2010	Texas	TITUS	MONTICELLO	Coal Steam	6147	1	No SCR or Scrubber >25 MW
2010	Texas	TITUS	MONTICELLO	Coal Steam	6147	2	No SCR or Scrubber >25 MW
2010	Texas	WILBARGER	OKLAUNION	Coal Steam	127	1	Scrubber
2010	Texas		NEW	Coal Steam			No SCR or Scrubber >25 MW
2010	Virginia	ALEXANDRIA (CITY)	POTOMAC RIVER	Coal Steam	3788	5	No SCR or Scrubber >25 MW
2010	Virginia	ALEXANDRIA (CITY)	POTOMAC RIVER	Coal Steam	3788	3	No SCR or Scrubber >25 MW
2010	Virginia	ALEXANDRIA (CITY)	POTOMAC RIVER	Coal Steam	3788	4	No SCR or Scrubber >25 MW
2010	Virginia	CAMPBELL	LG&E Westmoreland Altavista	Coal Steam	10773	GEN1	Scrubber
2010	Virginia	CHESAPEAKE (CITY)	CHESAPEAKE	Coal Steam	3803	1	No SCR or Scrubber >25 MW
2010	Virginia	CHESAPEAKE (CITY)	CHESAPEAKE	Coal Steam	3803	2	No SCR or Scrubber >25 MW
2010	Virginia	CHESAPEAKE (CITY)	CHESAPEAKE	Coal Steam	3803	3	No SCR or Scrubber >25 MW
2010	Virginia	CHESAPEAKE (CITY)	CHESAPEAKE	Coal Steam	3803	4	No SCR or Scrubber >25 MW
2010	Virginia	CHESTERFIELD	CHESTERFIELD	Coal Steam	3797	6	SCR and Scrubber
2010	Virginia	CHESTERFIELD	CHESTERFIELD	Coal Steam	3797	3	No SCR or Scrubber >25 MW
2010	Virginia	CHESTERFIELD	CHESTERFIELD	Coal Steam	3797	4	No SCR or Scrubber >25 MW
2010	Virginia	CHESTERFIELD	CHESTERFIELD	Coal Steam	3797	5	No SCR or Scrubber >25 MW
2010	Virginia	FLUVANNA	BREMO POWER STATION	Coal Steam	3796	3	No SCR or Scrubber >25 MW
2010	Virginia	FLUVANNA	BREMO POWER STATION	Coal Steam	3796	4	No SCR or Scrubber >25 MW
2010	Virginia	GILES	GLEN LYN	Coal Steam	3776	6	SCR
2010	Virginia	GILES	GLEN LYN	Coal Steam	3776	51	No SCR or Scrubber >25 MW
2010	Virginia	GILES	GLEN LYN	Coal Steam	3776	52	No SCR or Scrubber >25 MW
2010	Virginia	HALIFAX	CLOVER	Coal Steam	7213	1	Scrubber
2010	Virginia	HALIFAX	CLOVER	Coal Steam	7213	2	Scrubber
2010	Virginia	HOPEWELL (CITY)	LG&E Westmoreland Hopewell	Coal Steam	10771	GEN1	Scrubber
2010	Virginia	HOPEWELL (CITY)	Cogentrix Hopewell	Coal Steam	10377	GEN1	No SCR or Scrubber >25 MW
2010	Virginia	HOPEWELL (CITY)	Cogentrix Hopewell	Coal Steam	10377	GEN2	No SCR or Scrubber >25 MW
2010	Virginia	KING GEORGE	SEI Birchwood Power Facility	Coal Steam	54304	1	SCR and Scrubber
2010	Virginia	MECKLENBURG	Mecklenburg Cogeneration Facility	Coal Steam	52007	GEN1	Scrubber
2010	Virginia	MECKLENBURG	Mecklenburg Cogeneration Facility	Coal Steam	52007	GEN2	Scrubber
2010	Virginia	PORTSMOUTH (CITY)	Cogentrix Portsmouth	Coal Steam	10071	GEN1	No SCR or Scrubber >25 MW
2010	Virginia	PORTSMOUTH (CITY)	Cogentrix Portsmouth	Coal Steam	10071	GEN2	No SCR or Scrubber >25 MW
2010	Virginia	RICHMOND (CITY)	Cogentrix of Richmond Incorporated	Coal Steam	54081	GEN1	Scrubber
2010	Virginia	RICHMOND (CITY)	Cogentrix of Richmond Incorporated	Coal Steam	54081	GEN2	Scrubber
2010	Virginia	RICHMOND (CITY)	Cogentrix of Richmond Incorporated	Coal Steam	54081	GEN3	Scrubber
2010	Virginia	RICHMOND (CITY)	Cogentrix of Richmond Incorporated	Coal Steam	54081	GEN4	Scrubber
2010	Virginia	RUSSELL	CLINCH RIVER	Coal Steam	3775	1	SCR
2010	Virginia	RUSSELL	CLINCH RIVER	Coal Steam	3775	2	SCR
2010	Virginia	RUSSELL	CLINCH RIVER	Coal Steam	3775	3	SCR

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
65.27	5.09	10.79	750.0	0.96	0.16	0.33		
62.57	5.81	10.34	750.0	0.95	0.19	0.33		
41.48	4.90	11.45	528.0	0.90	0.24	0.55		
41.49	2.32	11.45	528.0	0.90	0.11	0.55		
42.20	3.61	11.65	528.0	0.91	0.17	0.55		
38.30	3.04	19.15	565.0	0.77	0.16	1.00		
39.40	4.55	19.70	565.0	0.80	0.23	1.00		
52.80	6.23	7.08	676.0	0.89	0.24	0.27		
13.35	0.40	0.50	206.2	0.74	0.06	0.07		
6.12	1.20	3.37	102.0	0.69	0.39	1.10	X	
6.49	1.34	3.57	102.0	0.73	0.41	1.10	X	
6.51	1.27	3.58	102.0	0.73	0.39	1.10	X	
4.99	0.44	1.14	57.1	0.96	0.18	0.46		
6.78	1.00	3.73	111.0	0.70	0.30	1.10		
6.59	0.84	3.62	111.0	0.68	0.25	1.10		
10.70	2.10	5.89	156.0	0.78	0.39	1.10		
16.08	1.93	8.84	217.0	0.85	0.24	1.10		
51.09	1.40	3.37	692.8	0.84	0.05	0.13		
6.63	0.80	3.65	100.0	0.76	0.24	1.10		
11.51	2.27	6.33	166.0	0.79	0.40	1.10		
21.80	2.98	11.99	326.0	0.76	0.27	1.10		
4.75	0.84	2.61	71.0	0.76	0.35	1.10		
10.55	1.49	5.80	156.0	0.77	0.28	1.10		
16.60	0.52	11.23	235.0	0.81	0.06	1.35		
2.64	0.60	1.73	45.0	0.67	0.46	1.31		
2.95	0.59	1.89	45.0	0.75	0.40	1.28		
31.40	3.08	1.57	441.0	0.81	0.20	0.10		
31.75	3.07	1.59	441.0	0.82	0.19	0.10		
4.86	0.43	1.11	56.9	0.96	0.18	0.46		
2.33	0.52	1.28	39.0	0.68	0.45	1.10		
2.33	0.52	1.28	39.0	0.68	0.45	1.10		
15.94	0.48	2.79	199.0	0.91	0.06	0.35		
4.84	0.77	0.49	61.0	0.91	0.32	0.20		
4.84	0.77	0.49	61.0	0.91	0.32	0.20		
1.94	0.44	1.07	24.5	0.91	0.45	1.10		
1.94	0.44	1.07	24.5	0.91	0.45	1.10		
4.78	1.08	0.36	60.3	0.91	0.45	0.15		
4.78	1.08	0.36	60.3	0.91	0.45	0.15		
4.78	1.08	0.36	60.3	0.91	0.45	0.15		
4.78	1.08	0.36	60.3	0.91	0.45	0.15		
16.51	0.50	11.17	230.0	0.82	0.06	1.35		
16.28	0.50	11.01	230.0	0.81	0.06	1.35		
16.18	0.44	10.94	230.0	0.80	0.05	1.35		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Virginia	SOUTHAMPTON	LG&E Westmoreland Southampton	Coal Steam	10774	GEN1	Scrubber
2010	Virginia	YORK	YORKTOWN	Coal Steam	3809	1	No SCR or Scrubber >25 MW
2010	Virginia	YORK	YORKTOWN	Coal Steam	3809	2	No SCR or Scrubber >25 MW
2010	West Virginia	GRANT	NORTH BRANCH POWER STATION	Coal Steam	7537	1B	Scrubber
2010	West Virginia	GRANT	NORTH BRANCH POWER STATION	Coal Steam	7537	1A	Scrubber
2010	West Virginia	GRANT	MT STORM	Coal Steam	3954	3	SCR and Scrubber
2010	West Virginia	GRANT	MT STORM	Coal Steam	3954	1	SCR and Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
2.59	0.49	0.59	35.0	0.85	0.38	0.46		
10.12	1.55	5.57	159.0	0.73	0.31	1.10		
10.70	1.64	5.89	167.0	0.73	0.31	1.10		
3.71	0.55	0.85	37.0	0.96	0.30	0.46		
2.96	0.44	0.68	37.0	0.91	0.30	0.46		
38.98	1.17	4.87	521.0	0.85	0.06	0.25		
42.55	1.36	5.32	533.0	0.91	0.06	0.25		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	West Virginia	GRANT	MT STORM	Coal Steam	3954	2	SCR and Scrubber
2010	West Virginia	HARRISON	HARRISON	Coal Steam	3944	1	SCR and Scrubber
2010	West Virginia	HARRISON	HARRISON	Coal Steam	3944	2	SCR and Scrubber
2010	West Virginia	HARRISON	HARRISON	Coal Steam	3944	3	SCR and Scrubber
2010	West Virginia	KANAWHA	KANAWHA RIVER	Coal Steam	3936	1	No SCR or Scrubber >25 MW
2010	West Virginia	KANAWHA	KANAWHA RIVER	Coal Steam	3936	2	No SCR or Scrubber >25 MW
2010	West Virginia	MARION	Grant Town Power Plant	Coal Steam	10151	GEN1	Scrubber
2010	West Virginia	MARSHALL	KAMMER	Coal Steam	3947	1	SCR and Scrubber
2010	West Virginia	MARSHALL	KAMMER	Coal Steam	3947	2	SCR and Scrubber
2010	West Virginia	MARSHALL	KAMMER	Coal Steam	3947	3	SCR and Scrubber
2010	West Virginia	MARSHALL	MITCHELL	Coal Steam	3948	1	SCR and Scrubber
2010	West Virginia	MARSHALL	MITCHELL	Coal Steam	3948	2	SCR and Scrubber
2010	West Virginia	MASON	MOUNTAINEER	Coal Steam	6264	1	SCR and Scrubber
2010	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	11	No SCR or Scrubber >25 MW
2010	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	21	No SCR or Scrubber >25 MW
2010	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	31	No SCR or Scrubber >25 MW
2010	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	41	No SCR or Scrubber >25 MW
2010	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	51	No SCR or Scrubber >25 MW
2010	West Virginia	MONONGALIA	Morgantown Energy Facility	Coal Steam	10743	GEN1	Scrubber
2010	West Virginia	MONONGALIA	FORT MARTIN	Coal Steam	3943	1	No SCR or Scrubber >25 MW
2010	West Virginia	MONONGALIA	FORT MARTIN	Coal Steam	3943	2	No SCR or Scrubber >25 MW
2010	West Virginia	PLEASANTS	WILLOW ISLAND	Coal Steam	3946	2	SCR and Scrubber
2010	West Virginia	PLEASANTS	PLEASANTS	Coal Steam	6004	1	SCR and Scrubber
2010	West Virginia	PLEASANTS	PLEASANTS	Coal Steam	6004	2	SCR and Scrubber
2010	West Virginia	PRESTON	ALBRIGHT	Coal Steam	3942	3	No SCR or Scrubber >25 MW
2010	West Virginia	PUTNAM	JOHN E AMOS	Coal Steam	3935	1	SCR and Scrubber
2010	West Virginia	PUTNAM	JOHN E AMOS	Coal Steam	3935	2	SCR and Scrubber
2010	West Virginia	PUTNAM	JOHN E AMOS	Coal Steam	3935	3	SCR and Scrubber
2010	Wisconsin	ASHLAND	BAY FRONT	Coal Steam	3982	1	No SCR or Scrubber >25 MW
2010	Wisconsin	ASHLAND	BAY FRONT	Coal Steam	3982	2	No SCR or Scrubber >25 MW
2010	Wisconsin	ASHLAND	BAY FRONT	Coal Steam	3982	5	No SCR or Scrubber <=25 MW
2010	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	4	No SCR or Scrubber >25 MW
2010	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	3	No SCR or Scrubber >25 MW
2010	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	5	No SCR or Scrubber >25 MW
2010	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	6	No SCR or Scrubber >25 MW
2010	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	7	No SCR or Scrubber >25 MW
2010	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	8	No SCR or Scrubber >25 MW
2010	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B4	No SCR or Scrubber >25 MW
2010	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B5	No SCR or Scrubber >25 MW
2010	Wisconsin	BUFFALO	J P MADGETT	Coal Steam	4271	B1	No SCR or Scrubber >25 MW
2010	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B1	No SCR or Scrubber <=25 MW
2010	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B2	No SCR or Scrubber <=25 MW
2010	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B3	No SCR or Scrubber <=25 MW
2010	Wisconsin	COLUMBIA	COLUMBIA	Coal Steam	8023	2	No SCR or Scrubber >25 MW
2010	Wisconsin	COLUMBIA	COLUMBIA	Coal Steam	8023	1	No SCR or Scrubber >25 MW
2010	Wisconsin	DANE	BLOUNT STREET	Coal Steam	3992	7	No SCR or Scrubber >25 MW
2010	Wisconsin	DANE	BLOUNT STREET	Coal Steam	3992	9	No SCR or Scrubber >25 MW
2010	Wisconsin	DANE	BLOUNT STREET	Coal Steam	3992	8	No SCR or Scrubber >25 MW
2010	Wisconsin	DANE	UW Madison Charter St Plant	Coal Steam	54408	1	No SCR or Scrubber <=25 MW
2010	Wisconsin	GRANT	NELSON DEWEY	Coal Steam	4054	1	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
42.55	1.36	5.32	533.0	0.91	0.06	0.25		
49.93	1.50	2.50	640.0	0.89	0.06	0.10		
49.93	1.50	2.50	640.0	0.89	0.06	0.10		
49.93	1.50	2.50	640.0	0.89	0.06	0.10		
11.90	2.94	8.18	195.0	0.70	0.49	1.38	X	X
12.00	2.97	8.25	195.0	0.70	0.49	1.38	X	X
8.42	1.26	1.43	84.0	0.96	0.30	0.34		
14.37	0.52	0.86	195.8	0.84	0.07	0.12	X	
14.30	0.52	0.86	195.8	0.83	0.07	0.12	X	
14.02	0.51	0.84	195.8	0.82	0.07	0.12	X	
58.01	2.03	7.66	800.0	0.83	0.07	0.26	X	
57.39	2.01	7.58	800.0	0.82	0.07	0.26	X	
101.37	3.04	13.38	1300.0	0.89	0.06	0.26	X	X
8.41	2.49	5.33	145.0	0.66	0.59	1.27	X	X
8.33	2.47	5.28	145.0	0.66	0.59	1.27	X	X
7.83	2.32	4.96	145.0	0.62	0.59	1.27	X	X
7.99	2.37	5.06	145.0	0.63	0.59	1.27	X	X
23.62	4.53	14.96	440.0	0.61	0.38	1.27	X	X
4.80	0.72	0.81	60.0	0.91	0.30	0.34		
37.00	5.42	24.39	552.0	0.77	0.29	1.32		
37.06	3.89	24.50	555.0	0.76	0.21	1.32		
14.03	0.42	0.84	177.2	0.90	0.06	0.12	X	X
45.07	1.28	5.21	614.0	0.84	0.06	0.23	X	X
44.33	1.40	5.13	614.0	0.82	0.06	0.23	X	X
7.93	1.57	5.95	137.0	0.66	0.40	1.50		
62.38	1.78	7.80	783.2	0.91	0.06	0.25	X	X
62.38	1.76	7.80	783.2	0.91	0.06	0.25	X	X
101.38	4.02	12.67	1272.7	0.91	0.08	0.25	X	X
2.70	0.51	1.89	25.0	0.96	0.38	1.40		
2.70	0.45	1.89	25.0	0.96	0.33	1.40		
2.11	0.94	1.48	25.0	0.96	0.89	1.40		
2.11	0.24	0.49	27.0	0.90	0.23	0.46		
2.24	0.26	0.52	28.6	0.90	0.23	0.46		
4.54	0.52	1.05	50.1	0.96	0.23	0.46		
6.02	0.69	1.40	70.8	0.96	0.23	0.46		
6.76	0.93	1.57	86.6	0.89	0.27	0.46		
11.20	1.15	2.48	144.0	0.89	0.21	0.44		
3.91	0.70	1.96	57.0	0.78	0.36	1.00		
5.69	1.02	2.84	87.0	0.75	0.36	1.00		
28.34	4.86	7.64	377.0	0.86	0.34	0.54		
1.96	0.72	1.38	19.7	0.96	0.73	1.40		
1.66	0.61	1.16	19.7	0.96	0.73	1.40		
1.99	0.73	1.40	23.6	0.96	0.73	1.40		
39.83	2.93	14.56	525.0	0.87	0.15	0.73		
41.09	2.47	14.67	525.0	0.89	0.12	0.71		
2.56	0.78	3.85	24.0	0.96	0.61	3.00		
2.92	0.49	1.46	48.7	0.68	0.34	1.00		
3.13	0.50	1.57	49.3	0.72	0.32	1.00		
0.28	0.07	0.42	4.0	0.79	0.53	3.00		
7.01	1.72	3.51	113.0	0.71	0.49	1.00		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2010	Wisconsin	GRANT	NELSON DEWEY	Coal Steam	4054	2	No SCR or Scrubber >25 MW
2010	Wisconsin	KENOSHA	PLEASANT PRAIRIE	Coal Steam	6170	2	SCR and Scrubber
2010	Wisconsin	KENOSHA	PLEASANT PRAIRIE	Coal Steam	6170	1	SCR and Scrubber
2010	Wisconsin	MANITOWOC	MANITOWOC	Coal Steam	4125	8	Scrubber
2010	Wisconsin	MANITOWOC	MANITOWOC	Coal Steam	4125	5	No SCR or Scrubber >25 MW
2010	Wisconsin	MANITOWOC	MANITOWOC	Coal Steam	4125	6	No SCR or Scrubber >25 MW
2010	Wisconsin	MANITOWOC	MANITOWOC	Coal Steam	4125	7	No SCR or Scrubber >25 MW
2010	Wisconsin	MARATHON	WESTON	Coal Steam	4078	1	No SCR or Scrubber >25 MW
2010	Wisconsin	MARATHON	WESTON	Coal Steam	4078	2	No SCR or Scrubber >25 MW
2010	Wisconsin	MARATHON	WESTON	Coal Steam	4078	3	No SCR or Scrubber >25 MW
2010	Wisconsin	MILWAUKEE	VALLEY	Coal Steam	4042	4	No SCR or Scrubber >25 MW
2010	Wisconsin	MILWAUKEE	VALLEY	Coal Steam	4042	1	No SCR or Scrubber >25 MW
2010	Wisconsin	MILWAUKEE	VALLEY	Coal Steam	4042	2	No SCR or Scrubber >25 MW
2010	Wisconsin	MILWAUKEE	VALLEY	Coal Steam	4042	3	No SCR or Scrubber >25 MW
2010	Wisconsin	MILWAUKEE	SOUTH OAK CREEK	Coal Steam	4041	5	No SCR or Scrubber >25 MW
2010	Wisconsin	MILWAUKEE	SOUTH OAK CREEK	Coal Steam	4041	6	No SCR or Scrubber >25 MW
2010	Wisconsin	MILWAUKEE	SOUTH OAK CREEK	Coal Steam	4041	7	No SCR or Scrubber >25 MW
2010	Wisconsin	MILWAUKEE	SOUTH OAK CREEK	Coal Steam	4041	8	No SCR or Scrubber >25 MW
2010	Wisconsin	MILWAUKEE	Milwaukee County	Coal Steam	7549	NA	No SCR or Scrubber <=25 MW
2010	Wisconsin	SHEBOYGAN	EDGEWATER	Coal Steam	4050	4	SCR
2010	Wisconsin	SHEBOYGAN	EDGEWATER	Coal Steam	4050	3	No SCR or Scrubber >25 MW
2010	Wisconsin	SHEBOYGAN	EDGEWATER	Coal Steam	4050	5	No SCR or Scrubber >25 MW
2010	Wisconsin	VERNON	GENOA	Coal Steam	4143	1	No SCR or Scrubber >25 MW
2010	Wisconsin	WINNEBAGO	MENASHA	Coal Steam	4127	B23	No SCR or Scrubber <=25 MW
2010	Wisconsin	WINNEBAGO	MENASHA	Coal Steam	4127	B24	No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2010
6.72	1.65	3.36	113.0	0.68	0.49	1.00		
47.71	1.43	3.82	588.8	0.93	0.06	0.16		
48.27	1.45	4.05	600.0	0.92	0.06	0.17		
1.66	0.28	0.24	22.0	0.86	0.34	0.29		
0.37	0.08	0.26	4.0	0.96	0.45	1.40		
2.06	0.35	1.44	22.0	0.96	0.34	1.40		
1.86	0.32	1.30	22.0	0.96	0.34	1.40		
5.02	0.57	1.52	61.4	0.93	0.23	0.61		
5.60	1.16	1.69	81.6	0.78	0.41	0.61		
25.55	1.60	8.05	334.0	0.87	0.13	0.63		
5.11	0.82	2.56	69.0	0.85	0.32	1.00		
5.16	0.83	2.58	69.6	0.85	0.32	1.00		
5.21	0.83	2.61	70.4	0.85	0.32	1.00		
5.25	0.84	2.62	71.0	0.84	0.32	1.00		
19.24	1.74	3.85	261.0	0.84	0.18	0.40		
19.80	1.79	3.96	264.0	0.86	0.18	0.40		
22.00	1.89	4.67	298.0	0.84	0.17	0.42		
23.52	1.52	5.00	312.0	0.86	0.13	0.42		
0.88	0.20	0.44	11.0	0.91	0.45	1.00		
25.89	0.78	8.48	342.0	0.86	0.06	0.66		
5.39	1.55	1.74	74.0	0.83	0.57	0.65		
30.14	2.71	10.61	402.0	0.86	0.18	0.70		
22.61	4.85	11.31	377.0	0.68	0.43	1.00		
0.79	0.18	1.98	9.4	0.96	0.45	5.00		
1.09	0.25	2.72	13.6	0.91	0.45	5.00		

CAIR-CAMR-CAVR 2015

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Alabama	COLBERT	COLBERT	Coal Steam	47	5	SCR and Scrubber
2015	Alabama	COLBERT	COLBERT	Coal Steam	47	1	SCR
2015	Alabama	COLBERT	COLBERT	Coal Steam	47	2	SCR
2015	Alabama	COLBERT	COLBERT	Coal Steam	47	3	SCR
2015	Alabama	COLBERT	COLBERT	Coal Steam	47	4	SCR
2015	Alabama	GREENE	GREENE COUNTY	Coal Steam	10	2	SCR and Scrubber
2015	Alabama	GREENE	GREENE COUNTY	Coal Steam	10	1	SCR and Scrubber
2015	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	7	SCR and Scrubber
2015	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	8	SCR and Scrubber
2015	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	1	SCR
2015	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	2	SCR
2015	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	3	SCR
2015	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	4	SCR
2015	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	5	SCR
2015	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	6	SCR
2015	Alabama	JEFFERSON	JAMES H MILLER JR	Coal Steam	6002	1	SCR
2015	Alabama	JEFFERSON	JAMES H MILLER JR	Coal Steam	6002	2	SCR
2015	Alabama	JEFFERSON	JAMES H MILLER JR	Coal Steam	6002	3	SCR
2015	Alabama	JEFFERSON	JAMES H MILLER JR	Coal Steam	6002	4	SCR
2015	Alabama	MOBILE	BARRY	Coal Steam	3	5	SCR and Scrubber
2015	Alabama	MOBILE	BARRY	Coal Steam	3	4	No SCR or Scrubber >25 MW
2015	Alabama	MOBILE	BARRY	Coal Steam	3	1	No SCR or Scrubber >25 MW
2015	Alabama	MOBILE	BARRY	Coal Steam	3	2	No SCR or Scrubber >25 MW
2015	Alabama	MOBILE	BARRY	Coal Steam	3	3	No SCR or Scrubber >25 MW
2015	Alabama	SHELBY	E C GASTON	Coal Steam	26	1	SCR and Scrubber
2015	Alabama	SHELBY	E C GASTON	Coal Steam	26	4	SCR and Scrubber
2015	Alabama	SHELBY	E C GASTON	Coal Steam	26	2	SCR and Scrubber
2015	Alabama	SHELBY	E C GASTON	Coal Steam	26	3	SCR and Scrubber
2015	Alabama	SHELBY	E C GASTON	Coal Steam	26	5	SCR and Scrubber
2015	Alabama	WALKER	GORGAS	Coal Steam	8	10	SCR and Scrubber
2015	Alabama	WALKER	GORGAS	Coal Steam	8	8	SCR and Scrubber
2015	Alabama	WALKER	GORGAS	Coal Steam	8	9	SCR and Scrubber
2015	Alabama	WALKER	GORGAS	Coal Steam	8	6	SCR
2015	Alabama	WALKER	GORGAS	Coal Steam	8	7	SCR
2015	Alabama	WASHINGTON	CHARLES R LOWMAN	Coal Steam	56	3	SCR and Scrubber
2015	Alabama	WASHINGTON	CHARLES R LOWMAN	Coal Steam	56	2	SCR and Scrubber
2015	Alabama	WASHINGTON	CHARLES R LOWMAN	Coal Steam	56	1	No SCR or Scrubber >25 MW
2015	Arkansas	BENTON	FLINT CREEK	Coal Steam	6138	1	Scrubber
2015	Arkansas	INDEPENDENCE	INDEPENDENCE	Coal Steam	6641	1	Scrubber
2015	Arkansas	INDEPENDENCE	INDEPENDENCE	Coal Steam	6641	2	Scrubber
2015	Arkansas	JEFFERSON	WHITE BLUFF	Coal Steam	6009	1	Scrubber
2015	Arkansas	JEFFERSON	WHITE BLUFF	Coal Steam	6009	2	Scrubber
2015	Connecticut	FAIRFIELD	BRIDGEPORT HARBOR	Coal Steam	568	BHB3	Scrubber
2015	Connecticut	NEW LONDON	AES Thames Incorporated	Coal Steam	10675	GEN1	Scrubber
2015	Delaware	NEW CASTLE	EDGE MOOR	Coal Steam	593	3	No SCR or Scrubber >25 MW
2015	Delaware	NEW CASTLE	EDGE MOOR	Coal Steam	593	4	No SCR or Scrubber >25 MW
2015	Delaware	SUSSEX	INDIAN RIVER	Coal Steam	594	4	Scrubber
2015	Delaware	SUSSEX	INDIAN RIVER	Coal Steam	594	1	No SCR or Scrubber >25 MW
2015	Delaware	SUSSEX	INDIAN RIVER	Coal Steam	594	2	No SCR or Scrubber >25 MW
2015	Delaware	SUSSEX	INDIAN RIVER	Coal Steam	594	3	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
36.78	1.10	4.60	451.3	0.93	0.06	0.25		
14.24	0.43	7.12	178.0	0.91	0.06	1.00		
14.18	0.43	7.09	178.0	0.91	0.06	1.00		
14.21	0.43	7.11	178.0	0.91	0.06	1.00		
14.16	0.42	7.08	178.0	0.91	0.06	1.00		
19.22	0.48	10.56	255.0	0.86	0.05	1.10		
18.91	0.81	10.39	262.0	0.82	0.09	1.10		
38.08	1.14	10.19	477.0	0.91	0.06	0.54	X	
35.80	1.07	6.71	467.0	0.88	0.06	0.37	X	
9.64	0.31	4.82	111.0	0.96	0.06	1.00	X	
9.25	0.17	4.62	111.0	0.95	0.04	1.00	X	
9.66	0.31	4.83	111.0	0.96	0.06	1.00	X	
9.68	0.31	4.84	111.0	0.96	0.06	1.00	X	
9.41	0.31	4.71	111.0	0.96	0.06	1.00	X	
9.10	0.29	4.55	111.0	0.94	0.06	1.00	X	
54.53	4.67	12.84	699.0	0.89	0.17	0.47	X	X
54.50	4.29	12.84	699.0	0.89	0.16	0.47	X	X
53.34	4.25	12.56	701.0	0.87	0.16	0.47	X	X
52.48	4.30	12.36	701.0	0.85	0.16	0.47	X	X
54.32	1.63	6.79	751.9	0.82	0.06	0.25		
26.15	2.58	13.07	362.0	0.82	0.20	1.00		
10.29	1.78	5.15	138.0	0.85	0.35	1.00		
10.47	1.81	5.23	139.0	0.86	0.35	1.00		
18.66	3.22	9.33	251.0	0.85	0.35	1.00		
17.67	0.56	5.09	251.4	0.80	0.06	0.58	X	X
18.74	0.54	5.40	253.3	0.84	0.06	0.58	X	X
18.77	0.59	5.41	256.3	0.96	0.06	0.58	X	X
18.83	0.54	5.43	257.3	0.84	0.06	0.58	X	X
60.34	1.81	7.54	842.9	0.82	0.06	0.25	X	X
51.63	1.55	6.45	707.8	0.83	0.06	0.25	X	X
12.57	0.31	6.91	167.0	0.86	0.05	1.10	X	X
13.72	0.32	7.54	177.0	0.88	0.05	1.10	X	X
9.48	0.31	5.05	110.0	0.96	0.07	1.07	X	X
9.20	0.30	4.90	111.0	0.95	0.07	1.07	X	X
20.37	0.60	4.96	235.0	0.96	0.06	0.49		
20.64	0.63	5.03	237.0	0.96	0.06	0.49		
2.17	0.45	1.08	80.0	0.31	0.41	1.00		
35.88	3.55	2.69	471.7	0.87	0.20	0.15		
66.07	7.33	4.96	818.5	0.92	0.22	0.15		
69.88	9.95	5.24	824.3	0.96	0.28	0.15		
65.41	4.81	4.91	797.9	0.94	0.15	0.15		
66.70	4.43	5.00	826.3	0.92	0.13	0.15		
28.17	2.11	2.11	377.4	0.85	0.15	0.15	X	
15.48	0.46	1.79	195.0	0.91	0.06	0.23		
5.95	0.51	3.27	84.0	0.81	0.17	1.10	X	
12.58	1.07	6.92	167.0	0.86	0.17	1.10	X	
34.09	3.77	2.56	394.8	0.96	0.22	0.15		
7.08	1.33	3.89	89.0	0.91	0.37	1.10		
7.49	1.27	4.12	89.0	0.96	0.34	1.10		
12.51	1.16	6.88	162.0	0.88	0.18	1.10		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Florida	ALACHUA	DEERHAVEN	Coal Steam	663	B2	No SCR or Scrubber >25 MW
2015	Florida	BAY	SMITH	Coal Steam	643	1	No SCR or Scrubber >25 MW
2015	Florida	BAY	SMITH	Coal Steam	643	2	No SCR or Scrubber >25 MW
2015	Florida	CITRUS	CRYSTAL RIVER	Coal Steam	628	4	SCR and Scrubber
2015	Florida	CITRUS	CRYSTAL RIVER	Coal Steam	628	5	SCR and Scrubber
2015	Florida	CITRUS	CRYSTAL RIVER	Coal Steam	628	1	No SCR or Scrubber >25 MW
2015	Florida	CITRUS	CRYSTAL RIVER	Coal Steam	628	2	No SCR or Scrubber >25 MW
2015	Florida	DUVAL	Cedar Bay Generating Company L P	Coal Steam	10672	GEN1	Scrubber
2015	Florida	DUVAL	ST JOHNS RIVER POWER	Coal Steam	207	1	SCR and Scrubber
2015	Florida	DUVAL	ST JOHNS RIVER POWER	Coal Steam	207	2	SCR and Scrubber
2015	Florida	ESCAMBIA	CRIST	Coal Steam	641	7	SCR and Scrubber
2015	Florida	ESCAMBIA	CRIST	Coal Steam	641	4	No SCR or Scrubber >25 MW
2015	Florida	ESCAMBIA	CRIST	Coal Steam	641	5	No SCR or Scrubber >25 MW
2015	Florida	ESCAMBIA	CRIST	Coal Steam	641	6	No SCR or Scrubber >25 MW
2015	Florida	HERNANDO	Central Power and Lime Incorporated	Coal Steam	10333	GEN1	Scrubber
2015	Florida	HILLSBOROUGH	BIG BEND	Coal Steam	645	BB02	SCR and Scrubber
2015	Florida	HILLSBOROUGH	BIG BEND	Coal Steam	645	BB01	SCR and Scrubber
2015	Florida	HILLSBOROUGH	BIG BEND	Coal Steam	645	BB03	SCR and Scrubber
2015	Florida	HILLSBOROUGH	BIG BEND	Coal Steam	645	BB04	SCR and Scrubber
2015	Florida	JACKSON	SCHOLZ	Coal Steam	642	1	No SCR or Scrubber >25 MW
2015	Florida	JACKSON	SCHOLZ	Coal Steam	642	2	No SCR or Scrubber >25 MW
2015	Florida	MARTIN	Indiantown Cogeneration Facility	Coal Steam	50976	GEN1	SCR and Scrubber
2015	Florida	ORANGE	STANTON ENERGY	Coal Steam	564	2	SCR and Scrubber
2015	Florida	ORANGE	STANTON ENERGY	Coal Steam	564	1	SCR and Scrubber
2015	Florida	POLK	C D MCINTOSH JR	Coal Steam	676	3	SCR and Scrubber
2015	Florida	PUTNAM	SEMINOLE	Coal Steam	136	1	SCR and Scrubber
2015	Florida	PUTNAM	SEMINOLE	Coal Steam	136	2	SCR and Scrubber
2015	Georgia	BARTOW	BOWEN	Coal Steam	703	2BLR	SCR and Scrubber
2015	Georgia	BARTOW	BOWEN	Coal Steam	703	3BLR	SCR and Scrubber
2015	Georgia	BARTOW	BOWEN	Coal Steam	703	4BLR	SCR and Scrubber
2015	Georgia	BARTOW	BOWEN	Coal Steam	703	1BLR	SCR
2015	Georgia	CHATHAM	KRAFT	Coal Steam	733	1	No SCR or Scrubber >25 MW
2015	Georgia	CHATHAM	KRAFT	Coal Steam	733	2	No SCR or Scrubber >25 MW
2015	Georgia	CHATHAM	KRAFT	Coal Steam	733	3	No SCR or Scrubber >25 MW
2015	Georgia	COBB	JACK MCDONOUGH	Coal Steam	710	MB1	SCR and Scrubber
2015	Georgia	COBB	JACK MCDONOUGH	Coal Steam	710	MB2	SCR and Scrubber
2015	Georgia	COWETA	YATES	Coal Steam	728	Y1BR	Scrubber
2015	Georgia	COWETA	YATES	Coal Steam	728	Y4BR	SCR and Scrubber
2015	Georgia	COWETA	YATES	Coal Steam	728	Y5BR	SCR and Scrubber
2015	Georgia	COWETA	YATES	Coal Steam	728	Y2BR	No SCR or Scrubber >25 MW
2015	Georgia	COWETA	YATES	Coal Steam	728	Y3BR	No SCR or Scrubber >25 MW
2015	Georgia	COWETA	YATES	Coal Steam	728	Y6BR	No SCR or Scrubber >25 MW
2015	Georgia	COWETA	YATES	Coal Steam	728	Y7BR	No SCR or Scrubber >25 MW
2015	Georgia	DOUGHERTY	MITCHELL	Coal Steam	727	3	No SCR or Scrubber >25 MW
2015	Georgia	EFFINGHAM	MCINTOSH	Coal Steam	6124	1	No SCR or Scrubber >25 MW
2015	Georgia	EFFINGHAM	Savannah River Mill	Coal Steam	10361	GEN3	No SCR or Scrubber <=25 MW
2015	Georgia	EFFINGHAM	Savannah River Mill	Coal Steam	10361	GEN4	No SCR or Scrubber <=25 MW
2015	Georgia	FLOYD	HAMMOND	Coal Steam	708	1	SCR and Scrubber
2015	Georgia	FLOYD	HAMMOND	Coal Steam	708	2	SCR and Scrubber
2015	Georgia	FLOYD	HAMMOND	Coal Steam	708	3	SCR and Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
17.71	2.83	8.86	218.0	0.93	0.32	1.00		
12.23	2.15	6.12	162.0	0.86	0.35	1.00		
14.20	2.52	7.10	189.0	0.86	0.35	1.00		
48.96	1.47	6.12	682.4	0.82	0.06	0.25		
48.57	1.46	6.07	682.4	0.81	0.06	0.25		
27.07	3.58	13.54	369.0	0.84	0.26	1.00		
30.48	3.66	15.24	464.0	0.75	0.24	1.00		
19.69	1.23	3.94	248.0	0.91	0.13	0.40		
38.57	1.05	6.75	624.0	0.71	0.05	0.35		
48.66	1.40	8.51	624.0	0.89	0.06	0.35		
37.18	1.12	4.65	467.0	0.91	0.06	0.25		
6.08	0.53	3.04	78.0	0.89	0.17	1.00		
6.32	0.73	3.16	80.0	0.90	0.23	1.00		
24.84	6.02	12.42	302.0	0.94	0.49	1.00		
8.81	1.41	2.97	111.0	0.91	0.32	0.67		
30.24	0.94	3.78	421.0	0.82	0.06	0.25		
31.35	0.97	3.92	421.0	0.85	0.06	0.25		
31.45	0.94	4.88	430.0	0.83	0.06	0.31		
31.76	0.95	4.92	439.0	0.83	0.06	0.31		
4.52	0.62	2.26	49.0	0.96	0.27	1.00		
4.52	0.62	2.26	49.0	0.96	0.27	1.00		
23.34	0.70	6.77	294.0	0.91	0.06	0.58		
37.72	1.13	4.72	441.0	0.96	0.06	0.25		
31.48	0.79	5.51	441.0	0.81	0.05	0.35		
25.19	0.70	4.41	333.0	0.86	0.06	0.35		
44.45	1.52	7.78	625.0	0.81	0.07	0.35		
42.68	1.48	7.47	625.0	0.78	0.07	0.35		
55.99	1.75	4.20	702.9	0.91	0.06	0.15	X	X
70.34	2.20	5.28	883.1	0.91	0.06	0.15	X	X
72.44	2.38	5.43	909.5	0.91	0.07	0.15	X	X
55.62	1.59	30.59	713.0	0.89	0.06	1.10	X	X
2.36	0.28	1.30	48.0	0.56	0.24	1.10		
2.40	0.29	1.32	52.0	0.53	0.24	1.10		
5.23	0.63	2.88	102.0	0.59	0.24	1.10		
18.47	0.34	0.56	252.6	0.83	0.04	0.06	X	X
19.03	0.35	0.58	253.6	0.86	0.04	0.06	X	X
8.84	1.72	0.33	99.0	0.96	0.39	0.07	X	X
10.38	0.25	0.32	132.2	0.90	0.05	0.06	X	X
10.61	0.26	0.32	134.1	0.90	0.05	0.06	X	X
5.69	1.24	3.13	105.0	0.62	0.44	1.10	X	X
6.28	1.37	3.45	112.0	0.64	0.44	1.10	X	X
26.14	3.47	14.38	352.0	0.85	0.27	1.10	X	X
26.40	3.39	14.52	355.0	0.85	0.26	1.10	X	X
7.90	1.04	4.35	153.0	0.59	0.26	1.10		
8.20	1.46	4.51	155.0	0.60	0.36	1.10		
0.03	0.01	0.04	0.5	0.76	0.48	2.20		
0.03	0.01	0.04	0.5	0.76	0.48	2.20		
8.58	0.27	0.26	109.6	0.89	0.06	0.06	X	X
8.63	0.27	0.26	109.6	0.90	0.06	0.06	X	X
8.54	0.26	0.26	109.6	0.89	0.06	0.06	X	X

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Georgia	FLOYD	HAMMOND	Coal Steam	708	4	SCR
2015	Georgia	HEARD	WANSLEY	Coal Steam	6052	1	SCR and Scrubber
2015	Georgia	HEARD	WANSLEY	Coal Steam	6052	2	SCR and Scrubber
2015	Georgia	MONROE	SCHERER	Coal Steam	6257	1	No SCR or Scrubber >25 MW
2015	Georgia	MONROE	SCHERER	Coal Steam	6257	4	No SCR or Scrubber >25 MW
2015	Georgia	MONROE	SCHERER	Coal Steam	6257	2	No SCR or Scrubber >25 MW
2015	Georgia	MONROE	SCHERER	Coal Steam	6257	3	No SCR or Scrubber >25 MW
2015	Georgia	PUTNAM	HARLLEE BRANCH	Coal Steam	709	1	SCR and Scrubber
2015	Georgia	PUTNAM	HARLLEE BRANCH	Coal Steam	709	2	SCR and Scrubber
2015	Georgia	PUTNAM	HARLLEE BRANCH	Coal Steam	709	4	SCR and Scrubber
2015	Georgia	PUTNAM	HARLLEE BRANCH	Coal Steam	709	3	SCR and Scrubber
2015	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	Illinois	CHRISTIAN	KINCAID	Coal Steam	876	1	SCR
2015	Illinois	CHRISTIAN	KINCAID	Coal Steam	876	2	SCR
2015	Illinois	COOK	CRAWFORD	Coal Steam	867	7	No SCR or Scrubber >25 MW
2015	Illinois	COOK	FISK	Coal Steam	886	19	No SCR or Scrubber >25 MW
2015	Illinois	COOK	CRAWFORD	Coal Steam	867	8	No SCR or Scrubber >25 MW
2015	Illinois	FULTON	DUCK CREEK	Coal Steam	6016	1	SCR and Scrubber
2015	Illinois	JASPER	NEWTON	Coal Steam	6017	1	Scrubber
2015	Illinois	JASPER	NEWTON	Coal Steam	6017	2	No SCR or Scrubber >25 MW
2015	Illinois	LAKE	WAUKEGAN	Coal Steam	883	17	SCR
2015	Illinois	LAKE	WAUKEGAN	Coal Steam	883	8	No SCR or Scrubber >25 MW
2015	Illinois	LAKE	WAUKEGAN	Coal Steam	883	7	No SCR or Scrubber >25 MW
2015	Illinois	MADISON	WOOD RIVER	Coal Steam	898	5	No SCR or Scrubber >25 MW
2015	Illinois	MADISON	WOOD RIVER	Coal Steam	898	4	No SCR or Scrubber >25 MW
2015	Illinois	MASON	HAVANA	Coal Steam	891	9	SCR
2015	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	1	No SCR or Scrubber >25 MW
2015	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	2	No SCR or Scrubber >25 MW
2015	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	3	No SCR or Scrubber >25 MW
2015	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	4	No SCR or Scrubber >25 MW
2015	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	5	No SCR or Scrubber >25 MW
2015	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	6	No SCR or Scrubber >25 MW
2015	Illinois	MONTGOMERY	COFFEEN	Coal Steam	861	01	SCR and Scrubber
2015	Illinois	MONTGOMERY	COFFEEN	Coal Steam	861	02	SCR and Scrubber
2015	Illinois	MORGAN	MEREDOSIA	Coal Steam	864	05	SCR and Scrubber
2015	Illinois	PEORIA	E D EDWARDS	Coal Steam	856	1	SCR and Scrubber
2015	Illinois	PEORIA	E D EDWARDS	Coal Steam	856	2	SCR and Scrubber
2015	Illinois	PEORIA	E D EDWARDS	Coal Steam	856	3	SCR and Scrubber
2015	Illinois	PIKE	PEARL STATION	Coal Steam	6238	1A	No SCR or Scrubber <=25 MW
2015	Illinois	PUTNAM	HENNEPIN	Coal Steam	892	2	Scrubber
2015	Illinois	RANDOLPH	BALDWIN	Coal Steam	889	1	SCR
2015	Illinois	RANDOLPH	BALDWIN	Coal Steam	889	2	SCR
2015	Illinois	RANDOLPH	BALDWIN	Coal Steam	889	3	No SCR or Scrubber >25 MW
2015	Illinois	SANGAMON	DALLMAN	Coal Steam	963	32	SCR and Scrubber
2015	Illinois	SANGAMON	DALLMAN	Coal Steam	963	33	SCR and Scrubber
2015	Illinois	SANGAMON	DALLMAN	Coal Steam	963	31	SCR and Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
39.79	1.27	21.88	510.0	0.89	0.06	1.10	X	X
69.48	1.92	5.21	872.3	0.91	0.06	0.15	X	X
69.56	1.89	5.22	873.3	0.91	0.05	0.15	X	X
63.44	9.15	26.26	849.1	0.85	0.29	0.83	X	
64.29	6.22	26.62	849.8	0.86	0.19	0.83	X	
62.98	8.65	26.07	856.1	0.84	0.27	0.83	X	
66.99	5.13	27.74	875.1	0.87	0.15	0.83	X	
19.74	0.70	0.60	260.4	0.87	0.07	0.06	X	X
23.90	0.85	0.73	318.2	0.86	0.07	0.06	X	X
36.17	1.22	1.10	496.4	0.83	0.07	0.06	X	X
36.98	1.25	1.12	498.3	0.85	0.07	0.06	X	X
0.00	0.00	0.00	0.0	0.73	0.06	0.08		
0.00	0.00	0.00	0.0	0.73	0.06	0.08		
0.00	0.00	0.00	0.0	0.73	0.06	0.08		
0.00	0.00	0.00	0.0	0.73	0.06	0.08		
0.00	0.00	0.00	0.0	0.73	0.06	0.07		
42.10	1.78	10.08	554.0	0.87	0.08	0.48		
40.82	1.73	9.78	554.0	0.84	0.08	0.48		
16.85	1.62	4.39	213.0	0.90	0.19	0.52	X	X
23.62	2.68	5.83	316.0	0.85	0.23	0.49	X	X
24.48	2.47	6.38	319.0	0.88	0.20	0.52	X	X
27.46	0.82	4.43	366.0	0.86	0.06	0.32		
45.01	3.09	2.70	543.4	0.95	0.14	0.12		
42.65	2.39	9.49	555.0	0.88	0.11	0.45		
8.45	0.26	1.90	100.0	0.96	0.06	0.45	X	X
22.58	1.62	5.58	297.0	0.87	0.14	0.49	X	X
25.35	1.75	6.07	328.0	0.88	0.14	0.48	X	X
27.71	2.13	6.36	372.0	0.85	0.15	0.46	X	X
8.20	0.62	1.95	96.0	0.96	0.15	0.48	X	X
30.99	0.93	15.50	428.0	0.83	0.06	1.00		
13.01	0.85	3.35	169.0	0.88	0.13	0.51		
12.93	0.84	3.33	169.0	0.87	0.13	0.51		
13.04	0.88	3.36	169.0	0.88	0.13	0.51		
13.04	0.88	3.36	169.0	0.88	0.13	0.51		
13.07	0.86	3.37	169.0	0.88	0.13	0.51		
12.99	0.85	3.34	169.0	0.88	0.13	0.51		
26.52	0.93	1.59	332.9	0.91	0.07	0.12		
43.55	1.52	2.61	548.2	0.91	0.07	0.12		
17.15	0.51	1.03	210.5	0.93	0.06	0.12		
10.63	0.31	0.64	114.5	0.96	0.06	0.12		
22.41	0.68	1.34	256.5	0.96	0.06	0.12		
27.74	0.83	1.66	353.4	0.90	0.06	0.12		
2.10	0.47	4.62	22.0	0.96	0.45	4.40		
17.75	1.15	1.07	210.5	0.96	0.13	0.12		
47.59	1.43	9.52	575.0	0.94	0.06	0.40	X	X
44.99	1.34	10.78	581.0	0.88	0.06	0.48	X	X
46.10	2.70	9.86	595.0	0.88	0.12	0.43	X	X
7.72	0.36	0.87	86.0	0.96	0.09	0.23		
15.54	0.47	1.94	190.0	0.93	0.06	0.25		
7.96	0.37	0.90	88.0	0.96	0.09	0.22		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Illinois	TAZEWELL	POWERTON	Coal Steam	879	52	SCR
2015	Illinois	TAZEWELL	POWERTON	Coal Steam	879	61	SCR
2015	Illinois	TAZEWELL	POWERTON	Coal Steam	879	62	SCR
2015	Illinois	TAZEWELL	POWERTON	Coal Steam	879	51	SCR
2015	Illinois	WILL	WILL COUNTY	Coal Steam	884	2	SCR
2015	Illinois	WILL	WILL COUNTY	Coal Steam	884	1	SCR
2015	Illinois	WILL	JOLIET 29	Coal Steam	384	72	No SCR or Scrubber >25 MW
2015	Illinois	WILL	JOLIET 29	Coal Steam	384	81	No SCR or Scrubber >25 MW
2015	Illinois	WILL	JOLIET 29	Coal Steam	384	82	No SCR or Scrubber >25 MW
2015	Illinois	WILL	JOLIET 29	Coal Steam	384	71	No SCR or Scrubber >25 MW
2015	Illinois	WILL	JOLIET 9	Coal Steam	874	5	No SCR or Scrubber >25 MW
2015	Illinois	WILL	WILL COUNTY	Coal Steam	884	4	No SCR or Scrubber >25 MW
2015	Illinois	WILL	WILL COUNTY	Coal Steam	884	3	No SCR or Scrubber >25 MW
2015	Illinois	WILLIAMSON	MARION	Coal Steam	976	4	SCR and Scrubber
2015	Illinois		MANO_IL_Coal Steam	Coal Steam	0	041	SCR and Scrubber
2015	Indiana	CASS	LOGANSPORT	Coal Steam	1032	5	No SCR or Scrubber <=25 MW
2015	Indiana	CASS	LOGANSPORT	Coal Steam	1032	6	No SCR or Scrubber <=25 MW
2015	Indiana	DEARBORN	TANNERS CREEK	Coal Steam	988	U4	SCR and Scrubber
2015	Indiana	DEARBORN	TANNERS CREEK	Coal Steam	988	U1	SCR
2015	Indiana	DEARBORN	TANNERS CREEK	Coal Steam	988	U2	SCR
2015	Indiana	DEARBORN	TANNERS CREEK	Coal Steam	988	U3	SCR
2015	Indiana	DUBOIS	JASPER 2	Coal Steam	6225	1	No SCR or Scrubber <=25 MW
2015	Indiana	FLOYD	R GALLAGHER	Coal Steam	1008	4	No SCR or Scrubber >25 MW
2015	Indiana	FLOYD	R GALLAGHER	Coal Steam	1008	1	No SCR or Scrubber >25 MW
2015	Indiana	FLOYD	R GALLAGHER	Coal Steam	1008	2	No SCR or Scrubber >25 MW
2015	Indiana	FLOYD	R GALLAGHER	Coal Steam	1008	3	No SCR or Scrubber >25 MW
2015	Indiana	GIBSON	GIBSON	Coal Steam	6113	1	SCR and Scrubber
2015	Indiana	GIBSON	GIBSON	Coal Steam	6113	2	SCR and Scrubber
2015	Indiana	GIBSON	GIBSON	Coal Steam	6113	3	SCR and Scrubber
2015	Indiana	GIBSON	GIBSON	Coal Steam	6113	5	SCR and Scrubber
2015	Indiana	GIBSON	GIBSON	Coal Steam	6113	4	SCR and Scrubber
2015	Indiana	JASPER	R M SCHAHFER	Coal Steam	6085	17	SCR and Scrubber
2015	Indiana	JASPER	R M SCHAHFER	Coal Steam	6085	18	SCR and Scrubber
2015	Indiana	JASPER	R M SCHAHFER	Coal Steam	6085	14	SCR
2015	Indiana	JASPER	R M SCHAHFER	Coal Steam	6085	15	No SCR or Scrubber >25 MW
2015	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	4	SCR and Scrubber
2015	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	1	SCR and Scrubber
2015	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	3	SCR and Scrubber
2015	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	2	SCR and Scrubber
2015	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	5	SCR and Scrubber
2015	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	6	SCR
2015	Indiana	LA PORTE	MICHIGAN CITY	Coal Steam	997	12	SCR
2015	Indiana	LAKE	STATE LINE	Coal Steam	981	4	SCR
2015	Indiana	LAKE	DEAN H MITCHELL	Coal Steam	996	11	No SCR or Scrubber >25 MW
2015	Indiana	LAKE	DEAN H MITCHELL	Coal Steam	996	4	No SCR or Scrubber >25 MW
2015	Indiana	LAKE	DEAN H MITCHELL	Coal Steam	996	5	No SCR or Scrubber >25 MW
2015	Indiana	LAKE	DEAN H MITCHELL	Coal Steam	996	6	No SCR or Scrubber >25 MW
2015	Indiana	LAKE	STATE LINE	Coal Steam	981	3	No SCR or Scrubber >25 MW
2015	Indiana	MARION	ELMER W STOUT	Coal Steam	990	70	SCR
2015	Indiana	MARION	ELMER W STOUT	Coal Steam	990	50	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
27.14	0.81	5.88	347.9	0.89	0.06	0.43		
27.20	0.82	5.89	348.6	0.89	0.06	0.43		
27.41	0.82	5.93	351.4	0.89	0.06	0.43		
27.47	0.62	5.95	352.1	0.89	0.06	0.43		
11.75	0.35	2.57	148.0	0.91	0.06	0.44	X	X
11.73	0.35	2.56	151.0	0.89	0.06	0.44	X	X
16.60	0.98	5.63	224.1	0.85	0.12	0.68	X	X
18.85	1.22	6.39	254.4	0.85	0.13	0.68	X	X
19.53	1.26	6.62	263.6	0.85	0.13	0.68	X	X
20.37	1.21	6.90	274.9	0.85	0.12	0.68	X	X
18.37	3.16	5.98	292.0	0.72	0.34	0.65	X	X
38.79	2.95	9.58	510.0	0.87	0.15	0.49	X	X
19.82	1.73	4.80	251.0	0.90	0.17	0.48	X	X
15.83	0.63	3.56	170.0	0.96	0.08	0.45		
32.35	0.97	7.95	500.0	0.74	0.06	0.49		
1.62	0.37	4.05	16.7	0.96	0.45	5.00		
1.78	0.40	4.45	22.3	0.91	0.45	5.00		
37.00	1.11	4.63	489.5	0.86	0.06	0.25	X	X
10.78	0.34	5.39	140.0	0.88	0.06	1.00	X	X
10.67	0.34	5.34	140.0	0.87	0.06	1.00	X	X
14.78	0.47	7.39	200.0	0.84	0.06	1.00	X	X
1.09	0.24	2.72	13.6	0.91	0.45	5.00	X	
10.37	2.05	5.19	140.0	0.85	0.39	1.00	X	X
10.98	2.19	5.49	140.0	0.89	0.40	1.00	X	X
10.98	2.19	5.49	140.0	0.89	0.40	1.00	X	X
10.37	2.05	5.19	140.0	0.85	0.39	1.00	X	X
49.13	1.51	6.14	616.8	0.91	0.06	0.25	X	
49.13	1.51	6.14	616.8	0.91	0.06	0.25	X	
49.13	1.41	6.14	616.8	0.91	0.06	0.25	X	
48.27	1.45	7.96	619.0	0.89	0.06	0.33	X	
48.53	1.46	8.49	622.0	0.89	0.06	0.35	X	
30.56	0.99	4.81	361.0	0.96	0.06	0.31		
29.11	0.80	4.59	361.0	0.92	0.06	0.31		
38.24	1.15	12.16	431.0	0.96	0.06	0.64		
39.82	4.66	11.61	472.0	0.96	0.23	0.58		
17.31	0.68	1.04	200.7	0.96	0.08	0.12	X	X
17.39	0.66	1.04	201.7	0.96	0.08	0.12	X	X
17.48	0.66	1.05	202.7	0.96	0.08	0.12	X	X
17.56	0.67	1.05	203.6	0.96	0.08	0.12	X	X
18.41	0.72	1.10	213.4	0.96	0.08	0.12	X	X
15.71	0.55	7.86	203.0	0.88	0.07	1.00	X	X
37.24	1.25	11.99	469.0	0.91	0.07	0.64		
21.55	0.70	5.22	303.0	0.81	0.06	0.48	X	X
9.01	1.66	4.51	110.0	0.94	0.41	1.00	X	X
9.99	1.20	5.00	125.0	0.91	0.24	1.00	X	X
9.88	0.72	4.94	125.0	0.90	0.15	1.00	X	X
10.20	1.34	5.10	125.0	0.93	0.26	1.00	X	X
14.62	1.68	4.34	187.0	0.89	0.23	0.59	X	X
29.86	2.44	14.93	422.0	0.81	0.16	1.00	X	X
7.88	1.40	3.94	106.0	0.85	0.35	1.00	X	X

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Indiana	MARION	ELMER W STOUT	Coal Steam	990	60	No SCR or Scrubber >25 MW
2015	Indiana	MARION	PERRY K	Coal Steam	992	11	No SCR or Scrubber <=25 MW
2015	Indiana	MARION	PERRY K	Coal Steam	992	12	No SCR or Scrubber <=25 MW
2015	Indiana	MARION	PERRY K	Coal Steam	992	13	No SCR or Scrubber <=25 MW
2015	Indiana	MARION	PERRY K	Coal Steam	992	14	No SCR or Scrubber <=25 MW
2015	Indiana	MARION	PERRY K	Coal Steam	992	15	No SCR or Scrubber <=25 MW
2015	Indiana	MARION	PERRY K	Coal Steam	992	16	No SCR or Scrubber <=25 MW
2015	Indiana	MIAMI	PERU	Coal Steam	1037	5	No SCR or Scrubber <=25 MW
2015	Indiana	MIAMI	PERU	Coal Steam	1037	2	No SCR or Scrubber <=25 MW
2015	Indiana	MONTGOMERY	CRAWFORDSVILLE	Coal Steam	1024	5	No SCR or Scrubber <=25 MW
2015	Indiana	MONTGOMERY	CRAWFORDSVILLE	Coal Steam	1024	6	No SCR or Scrubber <=25 MW
2015	Indiana	MORGAN	H T PRITCHARD	Coal Steam	991	3	No SCR or Scrubber >25 MW
2015	Indiana	MORGAN	H T PRITCHARD	Coal Steam	991	5	No SCR or Scrubber >25 MW
2015	Indiana	MORGAN	H T PRITCHARD	Coal Steam	991	6	No SCR or Scrubber >25 MW
2015	Indiana	MORGAN	H T PRITCHARD	Coal Steam	991	4	No SCR or Scrubber >25 MW
2015	Indiana	PIKE	PETERSBURG	Coal Steam	994	1	SCR and Scrubber
2015	Indiana	PIKE	PETERSBURG	Coal Steam	994	2	SCR and Scrubber
2015	Indiana	PIKE	PETERSBURG	Coal Steam	994	3	SCR and Scrubber
2015	Indiana	PIKE	PETERSBURG	Coal Steam	994	4	SCR and Scrubber
2015	Indiana	PIKE	FRANK E RATTS	Coal Steam	1043	2SG1	SCR
2015	Indiana	PIKE	FRANK E RATTS	Coal Steam	1043	1SG1	SCR
2015	Indiana	PORTER	BAILLY	Coal Steam	995	7	SCR and Scrubber
2015	Indiana	PORTER	BAILLY	Coal Steam	995	8	SCR and Scrubber
2015	Indiana	POSEY	A B BROWN	Coal Steam	6137	1	SCR and Scrubber
2015	Indiana	POSEY	A B BROWN	Coal Steam	6137	2	SCR and Scrubber
2015	Indiana	SPENCER	ROCKPORT	Coal Steam	6166	MB1	SCR
2015	Indiana	SPENCER	ROCKPORT	Coal Steam	6166	MB2	SCR
2015	Indiana	SULLIVAN	MEROM	Coal Steam	6213	2SG1	SCR and Scrubber
2015	Indiana	SULLIVAN	MEROM	Coal Steam	6213	1SG1	SCR and Scrubber
2015	Indiana	VERMILLION	CAYUGA	Coal Steam	1001	2	SCR and Scrubber
2015	Indiana	VERMILLION	CAYUGA	Coal Steam	1001	1	SCR and Scrubber
2015	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	6	SCR and Scrubber
2015	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	2	No SCR or Scrubber >25 MW
2015	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	4	No SCR or Scrubber >25 MW
2015	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	3	No SCR or Scrubber >25 MW
2015	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	5	No SCR or Scrubber >25 MW
2015	Indiana	WARRICK	F B CULLEY	Coal Steam	1012	2	Scrubber
2015	Indiana	WARRICK	F B CULLEY	Coal Steam	1012	3	SCR and Scrubber
2015	Indiana	WARRICK	WARRICK	Coal Steam	6705	4	SCR
2015	Indiana	WAYNE	WHITEWATER VALLEY	Coal Steam	1040	2	No SCR or Scrubber >25 MW
2015	Iowa	ALLAMAKEE	LANSING	Coal Steam	1047	4	No SCR or Scrubber >25 MW
2015	Iowa	ALLAMAKEE	LANSING	Coal Steam	1047	2	No SCR or Scrubber <=25 MW
2015	Iowa	ALLAMAKEE	LANSING	Coal Steam	1047	1	No SCR or Scrubber <=25 MW
2015	Iowa	BLACK HAWK	STREETER STATION	Coal Steam	1131	7	No SCR or Scrubber >25 MW
2015	Iowa	CLINTON	MILTON L KAPP	Coal Steam	1048	2	No SCR or Scrubber >25 MW
2015	Iowa	DES MOINES	BURLINGTON	Coal Steam	1104	1	No SCR or Scrubber >25 MW
2015	Iowa	DUBUQUE	DUBUQUE	Coal Steam	1046	5	No SCR or Scrubber >25 MW
2015	Iowa	DUBUQUE	DUBUQUE	Coal Steam	1046	1	No SCR or Scrubber >25 MW
2015	Iowa	LINN	PRAIRIE CREEK	Coal Steam	1073	3	No SCR or Scrubber >25 MW
2015	Iowa	LINN	PRAIRIE CREEK	Coal Steam	1073	4	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
7.85	1.35	3.93	106.0	0.85	0.34	1.00	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
1.04	0.23	2.59	12.3	0.96	0.45	5.00		
1.92	0.43	4.80	20.0	0.96	0.45	5.00		
0.98	0.22	2.46	11.7	0.96	0.45	5.00		
1.00	0.22	2.49	12.5	0.91	0.45	5.00		
2.96	1.13	1.48	43.0	0.78	0.76	1.00	X	X
3.98	0.48	1.99	62.0	0.73	0.24	1.00	X	X
7.18	1.48	3.59	99.0	0.83	0.41	1.00	X	X
3.87	0.56	1.94	56.0	0.79	0.29	1.00	X	X
17.62	0.54	3.35	232.0	0.87	0.06	0.38	X	
32.19	0.97	2.58	407.0	0.90	0.06	0.16	X	
39.57	1.50	7.52	510.0	0.89	0.08	0.38	X	
39.65	0.87	7.53	515.0	0.88	0.04	0.38	X	
8.80	1.02	4.40	121.0	0.83	0.23	1.00	X	
8.88	1.00	4.44	122.0	0.83	0.23	1.00	X	
13.07	0.33	2.03	160.0	0.93	0.05	0.31	X	X
26.28	1.34	4.07	320.0	0.94	0.10	0.31	X	X
19.50	0.55	4.14	250.0	0.89	0.06	0.42		
19.49	0.62	4.14	250.0	0.89	0.06	0.42		
95.02	2.85	30.88	1300.0	0.83	0.06	0.65	X	
94.62	2.84	30.75	1300.0	0.83	0.06	0.65	X	
38.55	1.10	6.75	493.0	0.89	0.06	0.35		
39.21	1.23	6.86	507.0	0.88	0.06	0.35		
36.16	0.94	4.52	479.7	0.86	0.05	0.25		
37.14	0.94	4.64	489.5	0.87	0.05	0.25		
24.53	1.07	3.07	311.3	0.90	0.09	0.25		
5.73	1.38	2.87	85.0	0.77	0.48	1.00		
5.89	1.42	2.95	85.0	0.79	0.48	1.00		
6.19	1.49	3.10	85.0	0.83	0.48	1.00		
6.70	1.61	3.35	95.0	0.81	0.48	1.00		
8.19	1.64	1.02	90.0	0.96	0.40	0.25	X	
19.50	0.59	2.44	250.0	0.89	0.06	0.25	X	
10.16	1.15	5.08	135.0	0.86	0.23	1.00	X	
1.38	0.30	1.52	63.0	0.25	0.43	2.20		
20.41	2.01	6.11	260.0	0.90	0.20	0.60		
1.03	0.29	1.54	11.0	0.96	0.57	3.00		
1.63	0.46	2.45	16.0	0.96	0.57	3.00		
2.17	0.41	1.08	37.0	0.67	0.37	1.00		
17.72	1.06	5.38	217.0	0.93	0.12	0.61		
16.42	1.31	5.98	211.0	0.89	0.16	0.73		
1.90	0.24	0.68	30.0	0.72	0.26	0.72		
2.62	0.31	0.94	35.0	0.85	0.24	0.72		
3.11	0.34	1.12	49.0	0.72	0.22	0.72		
9.71	1.81	3.38	142.0	0.78	0.37	0.70		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Iowa	LINN	PRAIRIE CREEK	Coal Steam	1073	1	No SCR or Scrubber <=25 MW
2015	Iowa	LINN	PRAIRIE CREEK	Coal Steam	1073	2	No SCR or Scrubber <=25 MW
2015	Iowa	LINN	SIXTH STREET	Coal Steam	1058	2	No SCR or Scrubber <=25 MW
2015	Iowa	LINN	SIXTH STREET	Coal Steam	1058	3	No SCR or Scrubber <=25 MW
2015	Iowa	LINN	SIXTH STREET	Coal Steam	1058	4	No SCR or Scrubber <=25 MW
2015	Iowa	LINN	SIXTH STREET	Coal Steam	1058	5	No SCR or Scrubber <=25 MW
2015	Iowa	LOUISA	LOUISA	Coal Steam	6664	101	No SCR or Scrubber >25 MW
2015	Iowa	MARION	PELLA	Coal Steam	1175	6	No SCR or Scrubber <=25 MW
2015	Iowa	MARION	PELLA	Coal Steam	1175	7	No SCR or Scrubber <=25 MW
2015	Iowa	MARSHALL	SUTHERLAND	Coal Steam	1077	1	No SCR or Scrubber >25 MW
2015	Iowa	MARSHALL	SUTHERLAND	Coal Steam	1077	2	No SCR or Scrubber >25 MW
2015	Iowa	MARSHALL	SUTHERLAND	Coal Steam	1077	3	No SCR or Scrubber >25 MW
2015	Iowa	MUSCATINE	MUSCATINE	Coal Steam	1167	9	Scrubber
2015	Iowa	MUSCATINE	MUSCATINE	Coal Steam	1167	8	No SCR or Scrubber >25 MW
2015	Iowa	MUSCATINE	FAIR STATION	Coal Steam	1218	2	No SCR or Scrubber >25 MW
2015	Iowa	MUSCATINE	FAIR STATION	Coal Steam	1218	1	No SCR or Scrubber <=25 MW
2015	Iowa	POTTAWATTAMIE	COUNCIL BLUFFS	Coal Steam	1082	3	No SCR or Scrubber >25 MW
2015	Iowa	POTTAWATTAMIE	COUNCIL BLUFFS	Coal Steam	1082	1	No SCR or Scrubber >25 MW
2015	Iowa	POTTAWATTAMIE	COUNCIL BLUFFS	Coal Steam	1082	2	No SCR or Scrubber >25 MW
2015	Iowa	SCOTT	RIVERSIDE	Coal Steam	1081	9	No SCR or Scrubber >25 MW
2015	Iowa	SCOTT	RIVERSIDE	Coal Steam	1081	6	No SCR or Scrubber <=25 MW
2015	Iowa	SCOTT	RIVERSIDE	Coal Steam	1081	7	No SCR or Scrubber <=25 MW
2015	Iowa	SCOTT	RIVERSIDE	Coal Steam	1081	8	No SCR or Scrubber <=25 MW
2015	Iowa	STORY	AMES	Coal Steam	1122	7	No SCR or Scrubber >25 MW
2015	Iowa	STORY	AMES	Coal Steam	1122	8	No SCR or Scrubber >25 MW
2015	Iowa	WAPELLO	OTTUMWA	Coal Steam	6254	1	No SCR or Scrubber >25 MW
2015	Iowa	WOODBURY	GEORGE NEAL NORTH	Coal Steam	1091	1	SCR
2015	Iowa	WOODBURY	GEORGE NEAL NORTH	Coal Steam	1091	2	No SCR or Scrubber >25 MW
2015	Iowa	WOODBURY	GEORGE NEAL NORTH	Coal Steam	1091	3	No SCR or Scrubber >25 MW
2015	Iowa	WOODBURY	GEORGE NEAL SOUTH	Coal Steam	7343	4	No SCR or Scrubber >25 MW
2015	Iowa		MAPP_IA_Coal Steam	Coal Steam	0	044	SCR and Scrubber
2015	Kentucky	BELL	PINEVILLE	Coal Steam	1360	3	No SCR or Scrubber >25 MW
2015	Kentucky	BOONE	EAST BEND	Coal Steam	6018	2	SCR and Scrubber
2015	Kentucky	CARROLL	GHENT	Coal Steam	1356	1	SCR and Scrubber
2015	Kentucky	CARROLL	GHENT	Coal Steam	1356	4	SCR and Scrubber
2015	Kentucky	CARROLL	GHENT	Coal Steam	1356	3	SCR and Scrubber
2015	Kentucky	CARROLL	GHENT	Coal Steam	1356	2	No SCR or Scrubber >25 MW
2015	Kentucky	CLARK	DALE	Coal Steam	1385	3	No SCR or Scrubber >25 MW
2015	Kentucky	CLARK	DALE	Coal Steam	1385	4	No SCR or Scrubber >25 MW
2015	Kentucky	CLARK	DALE	Coal Steam	1385	1	No SCR or Scrubber <=25 MW
2015	Kentucky	CLARK	DALE	Coal Steam	1385	2	No SCR or Scrubber <=25 MW
2015	Kentucky	DAVIESS	ELMER SMITH	Coal Steam	1374	1	SCR and Scrubber
2015	Kentucky	DAVIESS	ELMER SMITH	Coal Steam	1374	2	SCR and Scrubber
2015	Kentucky	HANCOCK	COLEMAN	Coal Steam	1381	C1	No SCR or Scrubber >25 MW
2015	Kentucky	HANCOCK	COLEMAN	Coal Steam	1381	C2	No SCR or Scrubber >25 MW
2015	Kentucky	HANCOCK	COLEMAN	Coal Steam	1381	C3	No SCR or Scrubber >25 MW
2015	Kentucky	HENDERSON	HMP&L STATION 2	Coal Steam	1382	H1	SCR and Scrubber
2015	Kentucky	HENDERSON	HMP&L STATION 2	Coal Steam	1382	H2	SCR and Scrubber
2015	Kentucky	HENDERSON	HENDERSON I	Coal Steam	1372	6	No SCR or Scrubber >25 MW
2015	Kentucky	HENDERSON	HENDERSON I	Coal Steam	1372	5	No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
0.80	0.18	2.01	9.5	0.96	0.45	5.00		
1.01	0.23	2.52	9.5	0.96	0.45	5.00		
2.05	0.42	5.13	19.0	0.96	0.41	5.00		
2.05	0.54	5.13	19.0	0.96	0.53	5.00		
1.60	0.33	4.01	19.0	0.96	0.41	5.00		
2.05	0.43	5.13	19.0	0.96	0.42	5.00		
46.42	5.22	13.37	644.0	0.82	0.23	0.58		
1.70	0.32	1.19	15.7	0.96	0.37	1.40		
2.19	0.41	1.53	20.3	0.96	0.37	1.40		
2.25	0.25	0.58	31.0	0.83	0.22	0.52		
2.31	0.25	0.60	31.0	0.85	0.22	0.52		
5.05	1.45	1.49	80.0	0.72	0.57	0.59		
13.79	0.94	0.60	161.0	0.96	0.14	0.09		
5.12	1.25	1.95	76.0	0.77	0.49	0.76		
2.37	0.38	1.18	41.0	0.66	0.32	1.00		
2.07	0.47	5.17	23.0	0.96	0.45	5.00		
45.19	5.87	13.94	637.0	0.81	0.26	0.62		
3.70	0.40	1.14	43.0	0.96	0.22	0.62		
6.08	0.44	1.88	88.0	0.79	0.14	0.62		
10.13	1.34	3.08	130.0	0.89	0.26	0.61		
0.12	0.04	0.31	1.5	0.96	0.57	5.00		
0.15	0.04	0.37	1.8	0.96	0.57	5.00		
0.15	0.04	0.37	1.8	0.96	0.57	5.00		
2.23	0.16	0.45	30.0	0.85	0.14	0.40		
4.84	0.53	0.97	65.0	0.85	0.22	0.40		
54.74	5.46	16.39	714.0	0.88	0.20	0.60		
10.26	0.31	3.74	135.0	0.87	0.06	0.73		
22.76	3.11	7.92	300.1	0.87	0.27	0.70		
28.94	6.12	10.07	370.9	0.89	0.42	0.70		
45.14	4.67	15.84	624.0	0.83	0.21	0.70		
51.11	1.53	6.75	790.0	0.74	0.06	0.26		
2.14	0.48	1.07	32.0	0.76	0.45	1.00		
46.79	1.40	2.34	600.0	0.89	0.06	0.10	X	X
36.89	1.11	9.22	476.0	0.88	0.06	0.50		
39.61	1.19	4.98	474.8	0.96	0.06	0.25		
40.83	1.22	5.10	487.5	0.96	0.06	0.25		
39.71	4.77	15.17	509.0	0.89	0.24	0.76		
4.19	0.81	2.31	66.0	0.73	0.38	1.10		
4.78	0.92	2.63	75.0	0.73	0.38	1.10		
1.76	0.50	1.94	20.0	0.96	0.57	2.20		
1.75	0.50	1.93	20.0	0.96	0.57	2.20		
11.26	0.43	1.13	141.0	0.91	0.08	0.20		
18.81	0.55	2.30	249.4	0.86	0.06	0.25		
10.27	2.20	5.14	148.6	0.79	0.43	1.00		
10.27	2.17	5.14	148.6	0.79	0.42	1.00		
10.61	1.98	5.31	153.6	0.79	0.37	1.00		
11.28	0.50	3.53	151.5	0.85	0.09	0.63		
11.73	0.50	1.44	157.5	0.85	0.08	0.25		
1.33	0.35	1.47	26.0	0.59	0.53	2.20		
0.84	0.19	2.11	10.0	0.96	0.45	5.00		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Kentucky	JEFFERSON	MILL CREEK	Coal Steam	1364	3	SCR and Scrubber
2015	Kentucky	JEFFERSON	MILL CREEK	Coal Steam	1364	4	SCR and Scrubber
2015	Kentucky	JEFFERSON	CANE RUN	Coal Steam	1363	4	SCR and Scrubber
2015	Kentucky	JEFFERSON	CANE RUN	Coal Steam	1363	5	SCR and Scrubber
2015	Kentucky	JEFFERSON	CANE RUN	Coal Steam	1363	6	SCR and Scrubber
2015	Kentucky	JEFFERSON	MILL CREEK	Coal Steam	1364	2	SCR and Scrubber
2015	Kentucky	JEFFERSON	MILL CREEK	Coal Steam	1364	1	SCR and Scrubber
2015	Kentucky	LAWRENCE	BIG SANDY	Coal Steam	1353	BSU1	SCR and Scrubber
2015	Kentucky	LAWRENCE	BIG SANDY	Coal Steam	1353	BSU2	SCR and Scrubber
2015	Kentucky	MASON	H L SPURLOCK	Coal Steam	6041	1	SCR and Scrubber
2015	Kentucky	MASON	H L SPURLOCK	Coal Steam	6041	2	SCR and Scrubber
2015	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	10	No SCR or Scrubber >25 MW
2015	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	1	No SCR or Scrubber >25 MW
2015	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	2	No SCR or Scrubber >25 MW
2015	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	3	No SCR or Scrubber >25 MW
2015	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	4	No SCR or Scrubber >25 MW
2015	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	5	No SCR or Scrubber >25 MW
2015	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	6	No SCR or Scrubber >25 MW
2015	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	7	No SCR or Scrubber >25 MW
2015	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	8	No SCR or Scrubber >25 MW
2015	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	9	No SCR or Scrubber >25 MW
2015	Kentucky	MERCER	E W BROWN	Coal Steam	1355	1	No SCR or Scrubber >25 MW
2015	Kentucky	MERCER	E W BROWN	Coal Steam	1355	2	No SCR or Scrubber >25 MW
2015	Kentucky	MERCER	E W BROWN	Coal Steam	1355	3	No SCR or Scrubber >25 MW
2015	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	2	Scrubber
2015	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	3	Scrubber
2015	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	1	Scrubber
2015	Kentucky	MUHLENBERG	PARADISE	Coal Steam	1378	3	SCR and Scrubber
2015	Kentucky	MUHLENBERG	PARADISE	Coal Steam	1378	1	SCR and Scrubber
2015	Kentucky	MUHLENBERG	PARADISE	Coal Steam	1378	2	SCR and Scrubber
2015	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	4	No SCR or Scrubber >25 MW
2015	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	5	No SCR or Scrubber >25 MW
2015	Kentucky	OHIO	D B WILSON	Coal Steam	6823	W1	SCR and Scrubber
2015	Kentucky	PULASKI	COOPER	Coal Steam	1384	2	SCR and Scrubber
2015	Kentucky	PULASKI	COOPER	Coal Steam	1384	1	No SCR or Scrubber >25 MW
2015	Kentucky	TRIMBLE	TRIMBLE COUNTY	Coal Steam	6071	1	SCR and Scrubber
2015	Kentucky	WEBSTER	R D GREEN	Coal Steam	6639	G2	SCR and Scrubber
2015	Kentucky	WEBSTER	R D GREEN	Coal Steam	6639	G1	SCR and Scrubber
2015	Kentucky	WEBSTER	ROBERT REID	Coal Steam	1383	R1	No SCR or Scrubber >25 MW
2015	Kentucky	WOODFORD	TYRONE	Coal Steam	1361	5	No SCR or Scrubber >25 MW
2015	Kentucky		ECAO_KY_Coal Steam	Coal Steam	0	013	SCR and Scrubber
2015	Louisiana	CALCASIEU	Nelson Coal	Coal Steam	1393	6	Scrubber
2015	Louisiana	DE SOTO	DOLET HILLS	Coal Steam	51	1	Scrubber
2015	Louisiana	POINTE COUPEE	BIG CAJUN 2	Coal Steam	6055	2B3	No SCR or Scrubber >25 MW
2015	Louisiana	POINTE COUPEE	BIG CAJUN 2	Coal Steam	6055	2B2	No SCR or Scrubber >25 MW
2015	Louisiana	POINTE COUPEE	BIG CAJUN 2	Coal Steam	6055	2B1	No SCR or Scrubber >25 MW
2015	Louisiana	RAPIDES	RODEMACHER	Coal Steam	6190	2	SCR end Scrubber
2015	Maryland	ALLEGANY	AES Warrior Run Cogeneration Facility	Coal Steam	10678	GEN1	Scrubber
2015	Maryland	ANNE ARUNDEL	HERBERT A WAGNER	Coal Steam	1554	2	SCR and Scrubber
2015	Maryland	ANNE ARUNDEL	HERBERT A WAGNER	Coal Steam	1554	3	SCR and Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
30.12	0.98	9.41	386.1	0.89	0.06	0.63	X	X
37.44	1.08	11.70	480.1	0.89	0.06	0.63	X	X
13.08	0.46	2.19	155.0	0.96	0.07	0.33	X	X
14.36	0.50	2.40	168.0	0.96	0.07	0.33	X	X
19.06	0.45	3.19	240.0	0.91	0.05	0.33	X	X
24.05	0.72	6.01	301.0	0.91	0.06	0.50	X	X
23.80	0.56	2.91	303.1	0.90	0.05	0.25	X	X
18.63	0.56	0.58	254.5	0.84	0.06	0.06	X	X
63.83	1.92	4.79	783.2	0.93	0.06	0.15	X	X
23.39	0.70	0.71	293.7	0.91	0.06	0.06		
38.97	1.17	4.87	489.5	0.91	0.06	0.25		
11.43	2.10	3.43	124.0	0.96	0.37	0.60		
10.33	1.99	3.47	134.0	0.88	0.38	0.67		
10.28	1.98	3.45	134.0	0.88	0.38	0.67		
10.28	1.98	3.45	134.0	0.88	0.38	0.67		
10.28	1.98	3.46	134.0	0.88	0.38	0.67		
10.29	1.98	3.46	134.0	0.88	0.38	0.67		
10.09	1.85	3.39	134.0	0.86	0.37	0.67		
10.28	1.89	3.45	134.0	0.88	0.37	0.67		
10.31	1.89	3.46	134.0	0.88	0.37	0.67		
10.33	1.90	3.47	134.0	0.88	0.37	0.67		
7.10	1.65	3.55	105.0	0.77	0.47	1.00		
11.58	2.02	5.79	168.0	0.79	0.35	1.00		
27.35	4.76	13.67	384.1	0.81	0.35	1.00		
1.39	0.47	0.51	17.5	0.91	0.68	0.72		
1.65	0.56	0.60	17.5	0.96	0.68	0.72		
1.24	0.42	0.45	18.0	0.79	0.67	0.72		
75.13	2.78	22.54	963.0	0.89	0.07	0.60		
48.05	1.97	10.67	602.0	0.91	0.08	0.44		
47.81	1.94	9.42	625.0	0.87	0.08	0.39		
4.77	0.76	2.38	71.0	0.77	0.32	1.00		
6.85	1.34	3.43	108.0	0.72	0.39	1.00		
32.45	1.28	10.14	416.2	0.89	0.08	0.63		
17.95	0.54	0.55	220.3	0.93	0.06	0.06		
8.00	1.75	4.40	116.0	0.79	0.44	1.10		
34.84	1.05	2.61	435.0	0.91	0.06	0.15		
16.46	0.45	2.02	221.1	0.85	0.05	0.25		
17.05	0.58	2.09	229.0	0.85	0.07	0.25		
3.52	0.93	3.87	64.0	0.63	0.53	2.20		
4.57	0.74	2.51	72.0	0.72	0.32	1.10		
17.34	0.10	5.42	268.1	0.74	0.01	0.63		
40.94	3.85	3.07	538.5	0.87	0.19	0.15		
52.10	7.61	5.74	650.0	0.92	0.29	0.22		
44.33	3.41	16.69	575.0	0.88	0.15	0.75		
45.55	5.38	17.35	575.0	0.90	0.24	0.76		
47.03	5.55	17.92	580.0	0.93	0.24	0.76		
41.98	1.26	1.26	512.0	0.94	0.06	0.06		
16.19	1.01	0.71	199.7	0.93	0.13	0.09		
10.95	0.33	0.66	132.2	0.95	0.06	0.12	X	
25.85	0.78	1.55	317.2	0.93	0.06	0.12	X	

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Maryland	ANNE ARUNDEL	BRANDON SHORES	Coal Steam	602	1	SCR and Scrubber
2015	Maryland	ANNE ARUNDEL	BRANDON SHORES	Coal Steam	602	2	SCR and Scrubber
2015	Maryland	BALTIMORE	C P CRANE	Coal Steam	1552	1	SCR and Scrubber
2015	Maryland	BALTIMORE	C P CRANE	Coal Steam	1552	2	SCR and Scrubber
2015	Maryland	CHARLES	MORGANTOWN	Coal Steam	1573	1	SCR and Scrubber
2015	Maryland	CHARLES	MORGANTOWN	Coal Steam	1573	2	SCR and Scrubber
2015	Maryland	MONTGOMERY	DICKERSON	Coal Steam	1572	1	SCR and Scrubber
2015	Maryland	MONTGOMERY	DICKERSON	Coal Steam	1572	3	SCR and Scrubber
2015	Maryland	MONTGOMERY	DICKERSON	Coal Steam	1572	2	SCR and Scrubber
2015	Maryland	PRINCE GEORGE'S	CHALK POINT	Coal Steam	1571	1	SCR and Scrubber
2015	Maryland	PRINCE GEORGE'S	CHALK POINT	Coal Steam	1571	2	SCR and Scrubber
2015	Massachusetts	BRISTOL	SOMERSET	Coal Steam	1613	8	Scrubber
2015	Massachusetts	BRISTOL	BRAYTON POINT	Coal Steam	1619	2	SCR and Scrubber
2015	Massachusetts	BRISTOL	BRAYTON POINT	Coal Steam	1619	1	SCR and Scrubber
2015	Massachusetts	BRISTOL	BRAYTON POINT	Coal Steam	1619	3	SCR and Scrubber
2015	Massachusetts	ESSEX	SALEM HARBOR	Coal Steam	1626	3	Scrubber
2015	Massachusetts	ESSEX	SALEM HARBOR	Coal Steam	1626	2	No SCR or Scrubber >25 MW
2015	Massachusetts	ESSEX	SALEM HARBOR	Coal Steam	1626	1	No SCR or Scrubber >25 MW
2015	Massachusetts	HAMPDEN	MOUNT TOM	Coal Steam	1606	1	Scrubber
2015	Michigan	BAY	DAN E KARN	Coal Steam	1702	2	SCR
2015	Michigan	BAY	J C WEADOCK	Coal Steam	1720	7	No SCR or Scrubber >25 MW
2015	Michigan	BAY	J C WEADOCK	Coal Steam	1720	8	No SCR or Scrubber >25 MW
2015	Michigan	BAY	DAN E KARN	Coal Steam	1702	1	No SCR or Scrubber >25 MW
2015	Michigan	DELTA	ESCANABA	Coal Steam	1771	1	No SCR or Scrubber <=25 MW
2015	Michigan	DELTA	ESCANABA	Coal Steam	1771	2	No SCR or Scrubber <=25 MW
2015	Michigan	EATON	ERICKSON	Coal Steam	1832	1	No SCR or Scrubber >25 MW
2015	Michigan	GRAND TRAVERSE	BAYSIDE	Coal Steam	1859	1	No SCR or Scrubber <=25 MW
2015	Michigan	GRAND TRAVERSE	BAYSIDE	Coal Steam	1859	2	No SCR or Scrubber <=25 MW
2015	Michigan	GRAND TRAVERSE	BAYSIDE	Coal Steam	1859	4	No SCR or Scrubber <=25 MW
2015	Michigan	HILLSDALE	ENDICOTT	Coal Steam	4259	1	Scrubber
2015	Michigan	HURON	HARBOR BEACH	Coal Steam	1731	1	No SCR or Scrubber >25 MW
2015	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	2	No SCR or Scrubber >25 MW
2015	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	1	No SCR or Scrubber >25 MW
2015	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	3	No SCR or Scrubber >25 MW
2015	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	4	No SCR or Scrubber >25 MW
2015	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	6	No SCR or Scrubber >25 MW
2015	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	5	No SCR or Scrubber >25 MW
2015	Michigan	MANISTEE	TES Filer City Station	Coal Steam	50835	GEN1	Scrubber
2015	Michigan	MARQUETTE	SHIRAS	Coal Steam	1843	3	Scrubber
2015	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	5	No SCR or Scrubber >25 MW
2015	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	6	No SCR or Scrubber >25 MW
2015	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	7	No SCR or Scrubber >25 MW
2015	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	8	No SCR or Scrubber >25 MW
2015	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	9	No SCR or Scrubber >25 MW
2015	Michigan	MARQUETTE	SHIRAS	Coal Steam	1843	2	No SCR or Scrubber <=25 MW
2015	Michigan	MONROE	MONROE	Coal Steam	1733	1	SCR
2015	Michigan	MONROE	MONROE	Coal Steam	1733	2	SCR
2015	Michigan	MONROE	MONROE	Coal Steam	1733	3	SCR
2015	Michigan	MONROE	MONROE	Coal Steam	1733	4	SCR
2015	Michigan	MONROE	J R WHITING	Coal Steam	1723	1	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
50.66	1.52	3.80	631.5	0.92	0.06	0.15	X	
48.98	1.47	3.67	632.4	0.88	0.06	0.15	X	
14.26	0.67	10.60	190.0	0.86	0.09	1.49	X	
13.86	0.55	10.31	190.0	0.83	0.08	1.49	X	
40.50	1.23	3.04	569.8	0.81	0.06	0.15	X	
39.83	1.18	2.99	569.8	0.80	0.06	0.15	X	
13.29	0.37	0.80	178.2	0.85	0.06	0.12	X	
12.81	0.36	0.77	178.2	0.82	0.06	0.12	X	
14.45	0.43	0.87	178.2	0.93	0.06	0.12	X	
25.10	0.78	1.51	333.8	0.86	0.06	0.12	X	
25.18	0.78	1.51	334.8	0.86	0.06	0.12	X	
9.04	0.92	2.66	109.9	0.94	0.20	0.59		
18.24	1.25	0.92	223.8	0.93	0.14	0.10		
18.78	1.30	0.94	230.4	0.93	0.14	0.10		
46.52	4.49	2.34	570.8	0.93	0.19	0.10		
11.56	1.16	3.40	140.5	0.94	0.20	0.59		
5.66	0.54	3.11	76.0	0.85	0.19	1.10		
6.12	0.60	3.36	78.0	0.89	0.20	1.10		
11.15	1.94	0.67	142.9	0.89	0.35	0.12		
21.86	0.66	10.93	260.0	0.96	0.06	1.00		
13.64	1.00	6.29	155.0	0.96	0.15	0.92		
13.45	0.99	6.20	155.0	0.96	0.15	0.92		
20.73	1.51	9.56	255.0	0.93	0.15	0.92		
1.09	0.25	0.55	13.0	0.96	0.45	1.00		
1.10	0.25	0.55	13.0	0.96	0.45	1.00		
10.43	2.13	4.07	156.0	0.76	0.41	0.78		
0.36	0.08	0.18	4.2	0.96	0.45	1.00		
0.36	0.08	0.18	4.2	0.96	0.45	1.00		
1.22	0.28	0.61	15.3	0.91	0.45	1.00		
4.89	0.64	0.30	50.0	0.96	0.26	0.12		
7.75	1.47	3.88	103.0	0.86	0.38	1.00		
3.15	0.21	0.92	42.5	0.85	0.13	0.59		
2.86	0.43	0.84	45.0	0.72	0.30	0.59		
3.38	0.20	0.99	45.5	0.85	0.12	0.59		
5.38	0.90	1.58	76.4	0.80	0.33	0.59		
5.49	0.75	1.61	76.6	0.82	0.27	0.59		
6.01	0.62	1.83	77.0	0.89	0.21	0.61		
4.37	0.98	0.33	55.0	0.91	0.45	0.15		
3.89	0.24	0.58	44.0	0.96	0.13	0.30		
5.89	1.87	2.94	87.0	0.77	0.63	1.00		
5.96	1.14	2.98	90.0	0.76	0.38	1.00		
6.95	1.70	1.88	85.0	0.93	0.49	0.54		
6.91	1.68	1.87	85.0	0.93	0.49	0.54		
7.12	1.75	1.92	88.0	0.92	0.49	0.54		
2.22	0.50	1.11	21.0	0.96	0.45	1.00		
53.55	1.77	26.77	750.0	0.82	0.07	1.00	X	X
53.24	1.76	26.62	750.0	0.81	0.07	1.00	X	X
52.92	1.43	26.46	750.0	0.81	0.05	1.00	X	X
59.20	1.60	29.60	750.0	0.90	0.05	1.00	X	X
8.68	1.11	4.34	95.0	0.96	0.25	1.00	X	X

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Michigan	MONROE	J R WHITING	Coal Steam	1723	2	No SCR or Scrubber >25 MW
2015	Michigan	MONROE	J R WHITING	Coal Steam	1723	3	No SCR or Scrubber >25 MW
2015	Michigan	MUSKEGON	B C COBB	Coal Steam	1695	5	No SCR or Scrubber >25 MW
2015	Michigan	MUSKEGON	B C COBB	Coal Steam	1695	4	No SCR or Scrubber >25 MW
2015	Michigan	OTTAWA	J B SIMS	Coal Steam	1825	3	Scrubber
2015	Michigan	OTTAWA	J H CAMPBELL	Coal Steam	1710	1	No SCR or Scrubber >25 MW
2015	Michigan	OTTAWA	J H CAMPBELL	Coal Steam	1710	2	No SCR or Scrubber >25 MW
2015	Michigan	OTTAWA	J H CAMPBELL	Coal Steam	1710	3	No SCR or Scrubber >25 MW
2015	Michigan	OTTAWA	JAMES DE YOUNG	Coal Steam	1830	5	No SCR or Scrubber >25 MW
2015	Michigan	OTTAWA	JAMES DE YOUNG	Coal Steam	1830	3	No SCR or Scrubber <=25 MW
2015	Michigan	OTTAWA	JAMES DE YOUNG	Coal Steam	1830	4	No SCR or Scrubber <=25 MW
2015	Michigan	ST. CLAIR	MARYSVILLE	Coal Steam	1732	10	No SCR or Scrubber >25 MW
2015	Michigan	ST. CLAIR	MARYSVILLE	Coal Steam	1732	11	No SCR or Scrubber >25 MW
2015	Michigan	ST. CLAIR	MARYSVILLE	Coal Steam	1732	12	No SCR or Scrubber >25 MW
2015	Michigan	ST. CLAIR	MARYSVILLE	Coal Steam	1732	9	No SCR or Scrubber >25 MW
2015	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	2	No SCR or Scrubber >25 MW
2015	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	4	No SCR or Scrubber >25 MW
2015	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	1	No SCR or Scrubber >25 MW
2015	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	3	No SCR or Scrubber >25 MW
2015	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	6	No SCR or Scrubber >25 MW
2015	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	7	No SCR or Scrubber >25 MW
2015	Michigan	ST. CLAIR	BELLE RIVER	Coal Steam	6034	1	No SCR or Scrubber >25 MW
2015	Michigan	ST. CLAIR	BELLE RIVER	Coal Steam	6034	2	No SCR or Scrubber >25 MW
2015	Michigan	WAYNE	WYANDOTTE	Coal Steam	1866	8	Scrubber
2015	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	16	No SCR or Scrubber >25 MW
2015	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	17	No SCR or Scrubber >25 MW
2015	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	18	No SCR or Scrubber >25 MW
2015	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	19	No SCR or Scrubber >25 MW
2015	Michigan	WAYNE	CONNERS CREEK	Coal Steam	1726	15	No SCR or Scrubber >25 MW
2015	Michigan	WAYNE	CONNERS CREEK	Coal Steam	1726	16	No SCR or Scrubber >25 MW
2015	Michigan	WAYNE	RIVER ROUGE	Coal Steam	1740	2	No SCR or Scrubber >25 MW
2015	Michigan	WAYNE	RIVER ROUGE	Coal Steam	1740	3	No SCR or Scrubber >25 MW
2015	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	9A	No SCR or Scrubber >25 MW
2015	Michigan	WAYNE	WYANDOTTE	Coal Steam	1866	7	No SCR or Scrubber <=25 MW
2015	Minnesota	BROWN	Springfield	Coal Steam	2012	4	No SCR or Scrubber <=25 MW
2015	Minnesota	CHIPPEWA	MINNESOTA VALLEY	Coal Steam	1918	4	No SCR or Scrubber >25 MW
2015	Minnesota	DAKOTA	BLACK DOG	Coal Steam	1904	3	No SCR or Scrubber >25 MW
2015	Minnesota	DAKOTA	BLACK DOG	Coal Steam	1904	4	No SCR or Scrubber >25 MW
2015	Minnesota	HENNEPIN	RIVERSIDE	Coal Steam	1927	6	No SCR or Scrubber >25 MW
2015	Minnesota	ITASCA	CLAY BOSWELL	Coal Steam	1893	3	Scrubber
2015	Minnesota	ITASCA	CLAY BOSWELL	Coal Steam	1893	1	No SCR or Scrubber >25 MW
2015	Minnesota	ITASCA	CLAY BOSWELL	Coal Steam	1893	2	No SCR or Scrubber >25 MW
2015	Minnesota	ITASCA	CLAY BOSWELL	Coal Steam	1893	4	No SCR or Scrubber >25 MW
2015	Minnesota	KANDIYOHI	WILLMAR	Coal Steam	2022	1	No SCR or Scrubber <=25 MW
2015	Minnesota	KANDIYOHI	WILLMAR	Coal Steam	2022	2	No SCR or Scrubber <=25 MW
2015	Minnesota	KANDIYOHI	WILLMAR	Coal Steam	2022	3	No SCR or Scrubber <=25 MW
2015	Minnesota	LAKE	Silver Bay Power Company	Coal Steam	10849	GEN1	No SCR or Scrubber <=25 MW
2015	Minnesota	LAKE	Silver Bay Power Company	Coal Steam	10849	GEN2	No SCR or Scrubber <=25 MW
2015	Minnesota	MOWER	NORTHEAST STATION	Coal Steam	1961	NEPP	No SCR or Scrubber >25 MW
2015	Minnesota	OLMSTED	SILVER LAKE	Coal Steam	2008	4	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
8.32	1.19	4.16	95.0	0.96	0.29	1.00	X	X
11.22	1.45	5.17	120.0	0.96	0.26	0.92	X	X
14.64	1.28	6.75	159.0	0.96	0.17	0.92		
14.61	1.04	6.74	161.0	0.96	0.14	0.92		
5.63	1.02	0.44	65.0	0.96	0.36	0.16		
22.22	3.01	10.24	254.0	0.96	0.27	0.92		
26.80	7.02	12.35	355.0	0.86	0.52	0.92		
61.95	11.25	28.56	790.1	0.90	0.36	0.92		
1.96	0.40	0.98	27.0	0.83	0.41	1.00		
0.92	0.21	0.46	10.5	0.96	0.45	1.00		
1.80	0.41	0.90	20.7	0.96	0.45	1.00		
4.22	0.51	2.11	50.0	0.96	0.24	1.00	X	X
4.22	0.51	2.11	50.0	0.96	0.24	1.00	X	X
4.22	0.51	2.11	50.0	0.96	0.24	1.00	X	X
4.22	0.51	2.11	50.0	0.96	0.24	1.00	X	X
12.72	1.61	5.86	162.0	0.90	0.25	0.92	X	X
12.13	1.43	5.59	162.0	0.86	0.24	0.92	X	X
12.07	1.43	5.57	163.0	0.85	0.24	0.92	X	X
12.06	1.39	5.56	163.0	0.84	0.23	0.92	X	X
21.55	1.61	10.78	294.0	0.84	0.15	1.00	X	X
32.97	3.07	16.48	435.0	0.87	0.19	1.00	X	X
47.84	5.44	13.54	625.1	0.87	0.23	0.57	X	X
48.74	3.83	13.79	634.9	0.88	0.16	0.57	X	X
1.69	0.16	0.26	20.0	0.96	0.19	0.31	X	X
2.06	0.25	1.03	26.2	0.90	0.24	1.00	X	X
2.28	0.27	1.14	26.2	0.96	0.24	1.00	X	X
2.06	0.25	1.03	26.2	0.90	0.24	1.00	X	X
2.06	0.25	1.03	26.2	0.90	0.24	1.00	X	X
10.68	0.40	5.34	118.0	0.96	0.07	1.00	X	X
10.68	0.38	5.34	118.0	0.96	0.07	1.00	X	X
17.93	2.64	8.97	238.0	0.86	0.29	1.00	X	X
19.09	3.43	9.54	262.0	0.83	0.36	1.00	X	X
35.32	2.94	17.66	515.0	0.78	0.17	1.00	X	X
1.69	0.32	0.84	20.0	0.96	0.38	1.00	X	X
0.40	0.09	0.20	4.0	0.96	0.45	1.00		
2.92	0.42	1.46	48.0	0.72	0.29	1.00		
9.54	1.10	1.91	112.0	0.96	0.23	0.40		
13.56	1.57	2.71	173.0	0.89	0.23	0.40		
5.88	0.67	1.18	75.0	0.89	0.23	0.40		
25.21	1.85	12.61	350.0	0.82	0.15	1.00		
5.17	0.69	2.59	69.0	0.86	0.27	1.00		
5.14	0.69	2.57	69.0	0.85	0.27	1.00		
43.19	4.86	8.64	535.0	0.92	0.23	0.40		
0.32	0.07	0.33	4.0	0.91	0.45	2.10		
0.35	0.03	0.37	4.0	0.96	0.19	2.10		
1.27	0.29	1.33	16.0	0.91	0.45	2.10		
0.03	0.01	0.03	0.3	0.91	0.44	2.10		
0.05	0.01	0.05	0.7	0.91	0.44	2.10		
2.01	0.32	1.01	29.0	0.79	0.32	1.00		
4.00	0.64	2.00	60.0	0.76	0.32	1.00		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Minnesota	OLMSTED	SILVER LAKE	Coal Steam	2008	1	No SCR or Scrubber <=25 MW
2015	Minnesota	OLMSTED	SILVER LAKE	Coal Steam	2008	2	No SCR or Scrubber <=25 MW
2015	Minnesota	OLMSTED	SILVER LAKE	Coal Steam	2008	3	No SCR or Scrubber <=25 MW
2015	Minnesota	OTTER TAIL	HOOT LAKE	Coal Steam	1943	2	No SCR or Scrubber >25 MW
2015	Minnesota	OTTER TAIL	HOOT LAKE	Coal Steam	1943	3	No SCR or Scrubber >25 MW
2015	Minnesota	OTTER TAIL	HOOT LAKE	Coal Steam	1943	1	No SCR or Scrubber <=25 MW
2015	Minnesota	SHERBURNE	SHERBURNE COUNTY	Coal Steam	6090	3	Scrubber
2015	Minnesota	SHERBURNE	SHERBURNE COUNTY	Coal Steam	6090	2	Scrubber
2015	Minnesota	SHERBURNE	SHERBURNE COUNTY	Coal Steam	6090	1	Scrubber
2015	Minnesota	ST. LOUIS	SYL LASKIN	Coal Steam	1891	1	Scrubber
2015	Minnesota	ST. LOUIS	SYL LASKIN	Coal Steam	1891	2	Scrubber
2015	Minnesota	ST. LOUIS	M L HIBBARD	Coal Steam	1897	3	No SCR or Scrubber >25 MW
2015	Minnesota	ST. LOUIS	M L HIBBARD	Coal Steam	1897	4	No SCR or Scrubber <=25 MW
2015	Minnesota	ST. LOUIS	VIRGINIA	Coal Steam	2018	7	No SCR or Scrubber <=25 MW
2015	Minnesota	ST. LOUIS	VIRGINIA	Coal Steam	2018	9	No SCR or Scrubber <=25 MW
2015	Minnesota	ST. LOUIS	HIBBING	Coal Steam	1979	1	No SCR or Scrubber <=25 MW
2015	Minnesota	ST. LOUIS	HIBBING	Coal Steam	1979	2	No SCR or Scrubber <=25 MW
2015	Minnesota	ST. LOUIS	HIBBING	Coal Steam	1979	3	No SCR or Scrubber <=25 MW
2015	Minnesota	WASHINGTON	ALLEN S KING	Coal Steam	1915	1	SCR and Scrubber
2015	Mississippi	CHOCTAW	Red Hills Generating Facility	Coal Steam	55076	350	SCR and Scrubber
2015	Mississippi	HARRISON	JACK WATSON	Coal Steam	2049	4	SCR
2015	Mississippi	HARRISON	JACK WATSON	Coal Steam	2049	5	SCR
2015	Mississippi	JACKSON	VICTOR J DANIEL JR.	Coal Steam	6073	1	SCR
2015	Mississippi	JACKSON	VICTOR J DANIEL JR.	Coal Steam	6073	2	SCR
2015	Mississippi	LAMAR	R D MORROW	Coal Steam	6061	1	SCR and Scrubber
2015	Mississippi	LAMAR	R D MORROW	Coal Steam	6061	2	SCR and Scrubber
2015	Missouri	BOONE	COLUMBIA	Coal Steam	2123	7	No SCR or Scrubber >25 MW
2015	Missouri	BOONE	COLUMBIA	Coal Steam	2123	6	No SCR or Scrubber <=25 MW
2015	Missouri	BOONE	COLUMBIA	Coal Steam	2123	8	No SCR or Scrubber <=25 MW
2015	Missouri	BUCHANAN	LAKE ROAD	Coal Steam	2098	5	No SCR or Scrubber <=25 MW
2015	Missouri	CLAY	MISSOURI CITY	Coal Steam	2171	1	No SCR or Scrubber <=25 MW
2015	Missouri	CLAY	MISSOURI CITY	Coal Steam	2171	2	No SCR or Scrubber <=25 MW
2015	Missouri	FRANKLIN	LABADIE	Coal Steam	2103	1	No SCR or Scrubber >25 MW
2015	Missouri	FRANKLIN	LABADIE	Coal Steam	2103	2	No SCR or Scrubber >25 MW
2015	Missouri	FRANKLIN	LABADIE	Coal Steam	2103	3	No SCR or Scrubber >25 MW
2015	Missouri	FRANKLIN	LABADIE	Coal Steam	2103	4	No SCR or Scrubber >25 MW
2015	Missouri	GREENE	SOUTHWEST	Coal Steam	6195	1	Scrubber
2015	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	3	No SCR or Scrubber >25 MW
2015	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	4	No SCR or Scrubber >25 MW
2015	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	5	No SCR or Scrubber >25 MW
2015	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	1	No SCR or Scrubber <=25 MW
2015	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	2	No SCR or Scrubber <=25 MW
2015	Missouri	HENRY	MONTROSE	Coal Steam	2080	2	No SCR or Scrubber >25 MW
2015	Missouri	HENRY	MONTROSE	Coal Steam	2080	1	No SCR or Scrubber >25 MW
2015	Missouri	HENRY	MONTROSE	Coal Steam	2080	3	No SCR or Scrubber >25 MW
2015	Missouri	JACKSON	HAWTHORN	Coal Steam	2079	5	SCR and Scrubber
2015	Missouri	JACKSON	SIBLEY	Coal Steam	2094	3	SCR
2015	Missouri	JACKSON	BLUE VALLEY	Coal Steam	2132	3	No SCR or Scrubber >25 MW
2015	Missouri	JACKSON	SIBLEY	Coal Steam	2094	2	No SCR or Scrubber >25 MW
2015	Missouri	JACKSON	SIBLEY	Coal Steam	2094	1	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
0.81	0.18	0.85	9.1	0.96	0.45	2.10		
1.23	0.28	1.29	13.9	0.96	0.45	2.10		
2.04	0.46	2.15	23.0	0.96	0.45	2.10		
4.92	0.36	1.39	64.6	0.87	0.15	0.56		
6.39	0.66	1.80	84.4	0.86	0.21	0.56		
0.68	0.15	0.71	8.0	0.96	0.45	2.10		
64.49	7.48	8.71	871.0	0.85	0.23	0.27		
54.03	6.81	7.56	709.0	0.87	0.25	0.28		
54.32	4.51	7.60	712.0	0.87	0.17	0.28		
3.85	0.96	0.77	55.0	0.80	0.50	0.40		
3.85	0.96	0.77	55.0	0.80	0.50	0.40		
2.45	0.33	1.22	37.0	0.76	0.27	1.00		
1.51	0.20	1.59	14.0	0.96	0.27	2.10		
0.56	0.13	0.58	7.0	0.91	0.45	2.10		
0.56	0.13	0.58	7.0	0.91	0.45	2.10		
0.79	0.18	0.83	10.0	0.91	0.45	2.10		
0.79	0.18	0.83	10.0	0.91	0.45	2.10		
0.74	0.17	0.77	10.0	0.84	0.45	2.10		
37.75	1.34	3.93	571.0	0.75	0.07	0.21		
28.47	0.85	8.54	440.0	0.74	0.06	0.60		
19.47	0.58	9.73	263.0	0.85	0.06	1.00		
37.79	1.32	18.89	499.0	0.86	0.07	1.00		
38.64	1.04	19.32	522.0	0.85	0.05	1.00		
38.37	1.10	19.18	524.0	0.84	0.06	1.00		
16.59	0.50	4.98	200.0	0.95	0.06	0.60		
16.59	0.50	4.98	200.0	0.95	0.06	0.60		
3.62	0.94	1.81	57.0	0.72	0.52	1.00		
1.18	0.31	2.96	14.0	0.96	0.52	5.00		
0.18	0.03	0.45	2.0	0.96	0.29	5.00		
2.19	0.62	1.53	21.0	0.96	0.57	1.40		
1.79	0.40	4.48	19.0	0.96	0.45	5.00		
1.79	0.40	4.48	19.0	0.96	0.45	5.00		
44.91	2.54	15.67	574.0	0.89	0.11	0.70	X	X
43.74	2.51	15.26	574.0	0.87	0.11	0.70	X	X
44.70	2.41	15.60	576.0	0.89	0.11	0.70	X	X
44.92	2.44	15.68	576.0	0.89	0.11	0.70	X	X
12.89	2.14	1.08	178.0	0.83	0.33	0.17		
3.42	0.99	0.82	41.0	0.95	0.58	0.48		
4.21	1.15	1.01	55.0	0.87	0.55	0.48		
7.30	1.64	1.75	97.0	0.86	0.45	0.48		
1.99	0.42	1.39	21.0	0.96	0.42	1.40		
1.99	0.42	1.39	21.0	0.96	0.42	1.40		
10.75	1.89	5.37	153.0	0.80	0.35	1.00		
11.02	1.54	5.51	155.0	0.81	0.28	1.00		
11.02	1.94	5.51	161.0	0.78	0.35	1.00		
42.26	1.27	1.77	550.0	0.88	0.06	0.08		
28.76	0.98	10.19	390.0	0.84	0.07	0.71		
3.78	0.62	1.89	51.0	0.85	0.33	1.00		
3.51	1.19	1.23	53.0	0.76	0.68	0.70		
3.42	1.16	1.20	53.0	0.74	0.68	0.70		

CAIR-CAMR-CAVR 2015

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Missouri	JACKSON	BLUE VALLEY	Coal Steam	2132	1	No SCR or Scrubber <=25 MW
2015	Missouri	JACKSON	BLUE VALLEY	Coal Steam	2132	2	No SCR or Scrubber <=25 MW
2015	Missouri	JASPER	ASBURY	Coal Steam	2076	1	SCR
2015	Missouri	JEFFERSON	RUSH ISLAND	Coal Steam	6155	1	No SCR or Scrubber >25 MW
2015	Missouri	JEFFERSON	RUSH ISLAND	Coal Steam	6155	2	No SCR or Scrubber >25 MW
2015	Missouri	LIVINGSTON	Chillicothe	Coal Steam	2122	4A	No SCR or Scrubber <=25 MW
2015	Missouri	LIVINGSTON	CHILLICOTHE	Coal Steam	2122	5	No SCR or Scrubber <=25 MW
2015	Missouri	LIVINGSTON	CHILLICOTHE	Coal Steam	2122	6	No SCR or Scrubber <=25 MW
2015	Missouri	NEW MADRID	NEW MADRID	Coal Steam	2167	1	SCR
2015	Missouri	NEW MADRID	NEW MADRID	Coal Steam	2167	2	SCR
2015	Missouri	OSAGE	CHAMOIS	Coal Steam	2169	2	No SCR or Scrubber >25 MW
2015	Missouri	OSAGE	CHAMOIS	Coal Steam	2169	1	No SCR or Scrubber <=25 MW
2015	Missouri	PLATTE	IATAN	Coal Steam	6065	1	No SCR or Scrubber >25 MW
2015	Missouri	RANDOLPH	THOMAS HILL	Coal Steam	2168	MB1	SCR
2015	Missouri	RANDOLPH	THOMAS HILL	Coal Steam	2168	MB2	SCR
2015	Missouri	RANDOLPH	THOMAS HILL	Coal Steam	2168	MB3	No SCR or Scrubber >25 MW
2015	Missouri	SALINE	MARSHALL	Coal Steam	2144	4	No SCR or Scrubber <=25 MW
2015	Missouri	SCOTT	SIKESTON	Coal Steam	6768	1	Scrubber
2015	Missouri	ST. CHARLES	SIOUX	Coal Steam	2107	1	SCR
2015	Missouri	ST. CHARLES	SIOUX	Coal Steam	2107	2	SCR
2015	Missouri	ST. LOUIS	MERAMEC	Coal Steam	2104	1	No SCR or Scrubber >25 MW
2015	Missouri	ST. LOUIS	MERAMEC	Coal Steam	2104	2	No SCR or Scrubber >25 MW
2015	Missouri	ST. LOUIS	MERAMEC	Coal Steam	2104	3	No SCR or Scrubber >25 MW
2015	Missouri	ST. LOUIS	MERAMEC	Coal Steam	2104	4	No SCR or Scrubber >25 MW
2015	New Jersey	CAPE MAY	B L ENGLAND	Coal Steam	2378	2	Scrubber
2015	New Jersey	CAPE MAY	B L ENGLAND	Coal Steam	2378	1	No SCR or Scrubber >25 MW
2015	New Jersey	CUMBERLAND	HOWARD DOWN	Coal Steam	2434	10	No SCR or Scrubber <=25 MW
2015	New Jersey	GLOUCESTER	Logan Generating Plant	Coal Steam	10043	GEN1	SCR and Scrubber
2015	New Jersey	HUDSON	HUDSON	Coal Steam	2403	2	SCR and Scrubber
2015	New Jersey	MERCER	MERCER	Coal Steam	2408	1	SCR and Scrubber
2015	New Jersey	MERCER	MERCER	Coal Steam	2408	2	SCR and Scrubber
2015	New Jersey	SALEM	Chambers Cogeneration Limited Partnership	Coal Steam	10566	GEN1	SCR and Scrubber
2015	New Jersey	SALEM	DEEPWATER	Coal Steam	2384	8	No SCR or Scrubber >25 MW
2015	New York	BROOME	GOUDEY	Coal Steam	2526	13	No SCR or Scrubber >25 MW
2015	New York	BROOME	GOUDEY	Coal Steam	2526	11	No SCR or Scrubber <=25 MW
2015	New York	BROOME	GOUDEY	Coal Steam	2526	12	No SCR or Scrubber <=25 MW
2015	New York	CHAUTAUQUA	DUNKIRK	Coal Steam	2554	4	SCR and Scrubber
2015	New York	CHAUTAUQUA	DUNKIRK	Coal Steam	2554	3	SCR and Scrubber
2015	New York	CHAUTAUQUA	DUNKIRK	Coal Steam	2554	1	No SCR or Scrubber >25 MW
2015	New York	CHAUTAUQUA	DUNKIRK	Coal Steam	2554	2	No SCR or Scrubber >25 MW
2015	New York	CHAUTAUQUA	S A CARLSON	Coal Steam	2682	10	No SCR or Scrubber <=25 MW
2015	New York	CHAUTAUQUA	S A CARLSON	Coal Steam	2682	11	No SCR or Scrubber <=25 MW
2015	New York	CHAUTAUQUA	S A CARLSON	Coal Steam	2682	12	No SCR or Scrubber <=25 MW
2015	New York	CHAUTAUQUA	S A CARLSON	Coal Steam	2682	9	No SCR or Scrubber <=25 MW
2015	New York	ERIE	C R HUNTLEY	Coal Steam	2549	67	SCR and Scrubber
2015	New York	ERIE	C R HUNTLEY	Coal Steam	2549	68	SCR and Scrubber
2015	New York	ERIE	C R HUNTLEY	Coal Steam	2549	64	No SCR or Scrubber >25 MW
2015	New York	JEFFERSON	Fort Drum H T W Cogeneration Facility	Coal Steam	10464	GEN1	Scrubber
2015	New York	MONROE	ROCHESTER 7	Coal Steam	2642	2	No SCR or Scrubber >25 MW
2015	New York	MONROE	ROCHESTER 7	Coal Steam	2642	3	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
1.77	0.38	0.89	21.0	0.96	0.42	1.00		
2.25	0.48	1.13	21.0	0.96	0.42	1.00		
17.56	0.68	4.60	211.0	0.95	0.08	0.52		
43.24	2.25	14.42	579.0	0.85	0.10	0.67	X	X
44.64	2.48	14.76	579.0	0.88	0.11	0.66	X	X
0.22	0.05	0.55	2.6	0.96	0.45	5.00		
0.42	0.09	1.05	5.2	0.92	0.45	5.00		
0.50	0.11	1.26	6.2	0.92	0.44	5.00		
44.09	2.81	9.04	580.0	0.87	0.13	0.41		
43.51	2.62	8.92	580.0	0.86	0.12	0.41		
3.84	0.94	0.96	49.0	0.89	0.49	0.50		
1.44	0.32	1.01	17.0	0.96	0.45	1.40		
49.18	8.19	15.25	670.0	0.84	0.33	0.62		
13.33	0.40	2.73	175.0	0.87	0.06	0.41		
21.13	0.63	4.32	275.0	0.88	0.06	0.41		
50.11	6.44	10.52	670.0	0.85	0.26	0.42		
0.54	0.12	1.35	5.0	0.96	0.45	5.00		
17.23	1.89	1.45	222.0	0.89	0.22	0.17		
32.92	1.01	16.46	476.0	0.79	0.06	1.00	X	X
31.96	0.94	15.98	476.0	0.77	0.06	1.00	X	X
11.44	0.84	2.67	132.0	0.96	0.15	0.47	X	X
10.81	0.80	2.53	132.0	0.94	0.15	0.47	X	X
20.86	2.42	7.40	277.0	0.86	0.23	0.71	X	X
25.72	2.37	9.12	336.0	0.87	0.18	0.71	X	X
12.91	2.15	2.26	155.0	0.95	0.33	0.35		
9.46	1.73	5.20	129.0	0.84	0.37	1.10		
1.79	0.33	1.35	23.0	0.89	0.37	1.50		
15.88	0.64	1.22	200.0	0.91	0.08	0.15	X	
47.90	1.48	10.96	600.0	0.91	0.06	0.46	X	
25.53	0.93	1.91	314.6	0.93	0.07	0.15	X	
25.53	1.12	1.91	314.6	0.93	0.09	0.15	X	
14.84	0.45	2.60	187.0	0.91	0.06	0.35		
6.76	1.34	5.07	80.0	0.96	0.40	1.50		
7.01	0.84	3.86	83.0	0.96	0.24	1.10		
1.75	0.43	1.92	22.0	0.91	0.49	2.20		
1.75	0.43	1.92	22.0	0.91	0.49	2.20		
14.71	0.44	0.65	199.7	0.84	0.06	0.09		
15.17	0.46	0.67	203.6	0.85	0.06	0.09		
7.13	1.17	3.92	91.0	0.89	0.33	1.10		
7.11	1.17	3.91	92.0	0.88	0.33	1.10		
0.99	0.22	1.09	12.5	0.91	0.44	2.20		
0.99	0.22	1.09	12.5	0.91	0.44	2.20		
0.99	0.21	1.09	12.5	0.91	0.41	2.20		
0.99	0.21	1.09	12.5	0.91	0.41	2.20		
14.39	0.43	0.63	187.0	0.88	0.06	0.09		
14.40	0.43	0.63	191.9	0.86	0.06	0.09		
6.55	1.39	3.60	92.0	0.81	0.42	1.10		
3.43	0.46	0.19	44.0	0.89	0.27	0.11		
5.06	0.71	2.78	65.0	0.89	0.28	1.10		
5.09	0.54	2.80	65.0	0.89	0.21	1.10		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	New York	MONROE	ROCHESTER 7	Coal Steam	2642	4	No SCR or Scrubber >25 MW
2015	New York	NIAGARA	UDG Niagara Falls Cogeneration Facility	Coal Steam	50202	GEN1	Scrubber
2015	New York	NIAGARA	KINTIGH	Coal Steam	6082	1	SCR and Scrubber
2015	New York	ONONDAGA	Fibertek Energy LLC	Coal Steam	50651	GEN1	No SCR or Scrubber >25 MW
2015	New York	ORANGE	DANSKAMMER	Coal Steam	2480	3	SCR and Scrubber
2015	New York	ORANGE	DANSKAMMER	Coal Steam	2480	4	SCR and Scrubber
2015	New York	ROCKLAND	LOVETT	Coal Steam	2629	4	SCR and Scrubber
2015	New York	ROCKLAND	LOVETT	Coal Steam	2629	5	SCR and Scrubber
2015	New York	TOMPKINS	MILLIKEN	Coal Steam	2535	2	Scrubber
2015	New York	TOMPKINS	MILLIKEN	Coal Steam	2535	1	SCR and Scrubber
2015	North Carolina	BLADEN	Cogentrix Elizabethtown	Coal Steam	10380	GEN1	No SCR or Scrubber <=25 MW
2015	North Carolina	BRUNSWICK	Cogentrix Southport	Coal Steam	10378	GEN1	No SCR or Scrubber >25 MW
2015	North Carolina	BRUNSWICK	Cogentrix Southport	Coal Steam	10378	GEN2	No SCR or Scrubber >25 MW
2015	North Carolina	BUNCOMBE	ASHEVILLE	Coal Steam	2706	1	Scrubber
2015	North Carolina	BUNCOMBE	ASHEVILLE	Coal Steam	2706	2	SCR and Scrubber
2015	North Carolina	CABARRUS	Kannapolis Energy Partners	Coal Steam	10626	GEN2	No SCR or Scrubber <=25 MW
2015	North Carolina	CABARRUS	Kannapolis Energy Partners	Coal Steam	10626	GEN3	No SCR or Scrubber <=25 MW
2015	North Carolina	CATAWBA	MARSHALL	Coal Steam	2727	4	Scrubber
2015	North Carolina	CATAWBA	MARSHALL	Coal Steam	2727	1	SCR and Scrubber
2015	North Carolina	CATAWBA	MARSHALL	Coal Steam	2727	2	SCR and Scrubber
2015	North Carolina	CATAWBA	MARSHALL	Coal Steam	2727	3	SCR and Scrubber
2015	North Carolina	CHATHAM	CAPE FEAR	Coal Steam	2708	5	Scrubber
2015	North Carolina	CHATHAM	CAPE FEAR	Coal Steam	2708	6	Scrubber
2015	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	5	SCR and Scrubber
2015	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	1	No SCR or Scrubber >25 MW
2015	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	2	No SCR or Scrubber >25 MW
2015	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	3	No SCR or Scrubber >25 MW
2015	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	4	No SCR or Scrubber >25 MW
2015	North Carolina	DUPLIN	Cogentrix Kenansville	Coal Steam	10381	GEN1	No SCR or Scrubber <=25 MW
2015	North Carolina	EDGECOMBE	Dwayne Collier Battle Cogeneration Facil	Coal Steam	10384	GEN1	Scrubber
2015	North Carolina	EDGECOMBE	Dwayne Collier Battle Cogeneration Facil	Coal Steam	10384	GEN2	Scrubber
2015	North Carolina	FORSYTH	Tobaccoville Utility Plant	Coal Steam	50221	GEN1	No SCR or Scrubber >25 MW
2015	North Carolina	FORSYTH	Tobaccoville Utility Plant	Coal Steam	50221	GEN2	No SCR or Scrubber >25 MW
2015	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	1	SCR and Scrubber
2015	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	2	SCR and Scrubber
2015	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	4	SCR and Scrubber
2015	North Carolina	GASTON	RIVERBEND	Coal Steam	2732	10	SCR and Scrubber
2015	North Carolina	GASTON	RIVERBEND	Coal Steam	2732	9	SCR and Scrubber
2015	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	3	SCR and Scrubber
2015	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	5	SCR and Scrubber
2015	North Carolina	GASTON	RIVERBEND	Coal Steam	2732	7	No SCR or Scrubber >25 MW
2015	North Carolina	GASTON	RIVERBEND	Coal Steam	2732	8	No SCR or Scrubber >25 MW
2015	North Carolina	HALIFAX	Westmoreland LG&E Partners Roanoke Valle	Coal Steam	54755	GEN2	Scrubber
2015	North Carolina	HALIFAX	Westmoreland LG&E Partners Roanoke Valle	Coal Steam	54035	GEN1	Scrubber
2015	North Carolina	NEW HANOVER	L V SUTTON	Coal Steam	2713	3	SCR and Scrubber
2015	North Carolina	NEW HANOVER	L V SUTTON	Coal Steam	2713	2	SCR
2015	North Carolina	NEW HANOVER	L V SUTTON	Coal Steam	2713	1	No SCR or Scrubber >25 MW
2015	North Carolina	PERSON	ROXBORO	Coal Steam	2712	2	SCR and Scrubber
2015	North Carolina	PERSON	ROXBORO	Coal Steam	2712	3A	SCR and Scrubber
2015	North Carolina	PERSON	ROXBORO	Coal Steam	2712	3B	SCR and Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
5.88	0.62	3.23	80.0	0.84	0.21	1.10		
4.00	0.25	0.44	50.0	0.91	0.13	0.22		
47.38	1.42	5.21	675.0	0.80	0.06	0.22		
6.35	1.11	3.49	80.0	0.91	0.35	1.10		
9.40	0.27	0.41	128.4	0.84	0.06	0.09	X	
17.35	0.53	0.76	227.9	0.87	0.06	0.09	X	
13.61	0.41	0.60	173.3	0.90	0.06	0.09	X	
15.78	0.47	0.69	192.9	0.93	0.06	0.09	X	
10.65	1.32	1.20	149.0	0.82	0.25	0.23		
11.23	0.34	0.93	157.0	0.82	0.06	0.17		
1.75	0.63	1.92	22.0	0.91	0.72	2.20		
3.35	0.76	1.84	45.5	0.84	0.45	1.10		
3.35	0.76	1.84	45.5	0.84	0.45	1.10		
18.61	2.97	0.58	193.9	0.96	0.32	0.06		
18.25	0.54	0.60	189.9	0.96	0.06	0.07		
0.50	0.11	0.55	6.3	0.91	0.45	2.20		
1.01	0.23	1.11	12.7	0.91	0.45	2.20		
51.46	6.25	3.90	646.2	0.91	0.24	0.15	X	
30.22	1.16	4.62	378.7	0.91	0.08	0.31	X	
30.22	0.78	4.62	378.7	0.91	0.05	0.31	X	
51.81	1.37	7.91	649.3	0.91	0.05	0.31	X	
12.07	1.19	0.37	140.0	0.96	0.20	0.06		
14.60	1.87	0.45	169.4	0.96	0.26	0.06		
43.43	0.76	7.93	552.4	0.90	0.03	0.37		
3.06	0.13	0.45	38.0	0.92	0.09	0.29		
3.06	0.09	0.45	38.0	0.92	0.06	0.29		
4.91	0.23	0.72	61.0	0.92	0.10	0.29		
4.91	0.25	0.72	61.0	0.92	0.10	0.29		
1.67	0.38	1.83	21.0	0.91	0.45	2.20		
4.29	0.97	0.16	54.0	0.91	0.45	0.07		
4.29	0.97	0.16	54.0	0.91	0.45	0.07		
1.58	0.36	0.87	26.5	0.68	0.45	1.10		
1.58	0.36	0.87	26.5	0.68	0.45	1.10		
13.71	0.41	2.09	162.3	0.96	0.06	0.31		
13.71	0.41	2.09	162.3	0.96	0.06	0.31		
21.59	0.64	3.30	270.5	0.91	0.06	0.31		
11.23	0.39	0.34	130.2	0.96	0.07	0.06		
11.23	0.38	0.34	130.2	0.96	0.07	0.06		
22.37	0.62	0.68	259.4	0.96	0.06	0.06		
21.54	0.78	0.65	264.3	0.93	0.07	0.06		
7.56	0.23	1.11	94.0	0.92	0.06	0.29		
7.56	0.39	1.11	94.0	0.92	0.10	0.29		
4.13	0.93	0.15	52.0	0.91	0.45	0.08		
13.26	1.45	0.73	167.0	0.91	0.22	0.11		
31.97	0.98	1.09	401.4	0.91	0.06	0.07		
8.21	0.26	4.52	106.0	0.88	0.06	1.10		
7.70	0.68	1.78	97.0	0.91	0.18	0.46		
53.46	1.60	4.01	655.9	0.93	0.06	0.15		
27.57	0.83	0.88	346.1	0.91	0.06	0.06		
27.57	0.83	0.88	346.1	0.91	0.06	0.06		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	North Carolina	PERSON	ROXBORO	Coal Steam	2712	1	SCR and Scrubber
2015	North Carolina	PERSON	MAYO	Coal Steam	6250	1A	SCR and Scrubber
2015	North Carolina	PERSON	MAYO	Coal Steam	6250	1B	SCR and Scrubber
2015	North Carolina	PERSON	ROXBORO	Coal Steam	2712	4A	SCR and Scrubber
2015	North Carolina	PERSON	ROXBORO	Coal Steam	2712	4B	SCR and Scrubber
2015	North Carolina	PERSON	Cogentrix Roxboro	Coal Steam	10379	GEN1	No SCR or Scrubber >25 MW
2015	North Carolina	ROBESON	W H WEATHERSPOON	Coal Steam	2716	1	No SCR or Scrubber >25 MW
2015	North Carolina	ROBESON	W H WEATHERSPOON	Coal Steam	2716	2	No SCR or Scrubber >25 MW
2015	North Carolina	ROBESON	W H WEATHERSPOON	Coal Steam	2716	3	No SCR or Scrubber >25 MW
2015	North Carolina	ROBESON	Cogentrix Lumberton	Coal Steam	10382	GEN1	No SCR or Scrubber <=25 MW
2015	North Carolina	ROCKINGHAM	DAN RIVER	Coal Steam	2723	3	SCR and Scrubber
2015	North Carolina	ROCKINGHAM	DAN RIVER	Coal Steam	2723	1	No SCR or Scrubber >25 MW
2015	North Carolina	ROCKINGHAM	DAN RIVER	Coal Steam	2723	2	No SCR or Scrubber >25 MW
2015	North Carolina	ROWAN	BUCK	Coal Steam	2720	8	SCR and Scrubber
2015	North Carolina	ROWAN	BUCK	Coal Steam	2720	9	SCR and Scrubber
2015	North Carolina	ROWAN	BUCK	Coal Steam	2720	5	No SCR or Scrubber >25 MW
2015	North Carolina	ROWAN	BUCK	Coal Steam	2720	6	No SCR or Scrubber >25 MW
2015	North Carolina	ROWAN	BUCK	Coal Steam	2720	7	No SCR or Scrubber >25 MW
2015	North Carolina	STOKES	BELEWS CREEK	Coal Steam	8042	1	SCR and Scrubber
2015	North Carolina	STOKES	BELEWS CREEK	Coal Steam	8042	2	SCR and Scrubber
2015	North Carolina	WAYNE	LEE	Coal Steam	2709	3	SCR and Scrubber
2015	North Carolina	WAYNE	LEE	Coal Steam	2709	1	No SCR or Scrubber >25 MW
2015	North Carolina	WAYNE	LEE	Coal Steam	2709	2	No SCR or Scrubber >25 MW
2015	North Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	North Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	North Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	North Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	North Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	Ohio	ADAMS	J M STUART	Coal Steam	2850	1	SCR and Scrubber
2015	Ohio	ADAMS	J M STUART	Coal Steam	2850	2	SCR and Scrubber
2015	Ohio	ADAMS	J M STUART	Coal Steam	2850	3	SCR and Scrubber
2015	Ohio	ADAMS	J M STUART	Coal Steam	2850	4	SCR and Scrubber
2015	Ohio	ADAMS	KILLEN STATION	Coal Steam	6031	2	SCR and Scrubber
2015	Ohio	ASHTABULA	ASHTABULA	Coal Steam	2835	7	No SCR or Scrubber >25 MW
2015	Ohio	AUGLAIZE	ST MARYS	Coal Steam	2942	5	No SCR or Scrubber <=25 MW
2015	Ohio	AUGLAIZE	ST MARYS	Coal Steam	2942	6	No SCR or Scrubber <=25 MW
2015	Ohio	BELMONT	R E BURGER	Coal Steam	2864	7	SCR and Scrubber
2015	Ohio	BELMONT	R E BURGER	Coal Steam	2864	8	SCR and Scrubber
2015	Ohio	BELMONT	R E BURGER	Coal Steam	2864	5	No SCR or Scrubber >25 MW
2015	Ohio	BELMONT	R E BURGER	Coal Steam	2864	6	No SCR or Scrubber >25 MW
2015	Ohio	BUTLER	HAMILTON	Coal Steam	2917	9	Scrubber
2015	Ohio	BUTLER	HAMILTON	Coal Steam	2917	8	No SCR or Scrubber >25 MW
2015	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	5	SCR and Scrubber
2015	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	6	SCR and Scrubber
2015	Ohio	CLERMONT	W H ZIMMER	Coal Steam	6019	1	SCR and Scrubber
2015	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	1	No SCR or Scrubber >25 MW
2015	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	2	No SCR or Scrubber >25 MW
2015	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	3	No SCR or Scrubber >25 MW
2015	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	4	No SCR or Scrubber >25 MW
2015	Ohio	COSHOCTON	CONESVILLE	Coal Steam	2840	3	SCR and Scrubber

CAIR-CAMR-CAVR 2015

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
30.72	0.92	1.02	376.9	0.93	0.06	0.07		
29.03	0.87	3.63	364.7	0.91	0.06	0.25		
29.03	0.87	3.63	364.7	0.91	0.06	0.25		
27.28	0.82	0.88	342.7	0.91	0.06	0.06		
27.28	0.82	0.88	342.7	0.91	0.06	0.06		
3.32	0.75	1.82	45.0	0.84	0.45	1.10		
4.62	0.20	0.35	49.0	0.96	0.09	0.15		
4.51	0.20	0.34	49.0	0.96	0.09	0.15		
6.39	0.15	0.48	78.0	0.93	0.05	0.15		
1.72	0.55	1.89	22.0	0.89	0.64	2.20		
11.80	0.43	1.80	139.7	0.96	0.07	0.31		
5.39	0.16	0.79	67.0	0.92	0.06	0.29		
5.39	0.16	0.79	67.0	0.92	0.06	0.29		
10.81	0.23	0.33	125.3	0.96	0.04	0.06		
10.81	0.23	0.33	125.3	0.96	0.04	0.06		
3.02	0.15	0.44	37.5	0.92	0.10	0.29		
3.02	0.16	0.44	37.5	0.92	0.11	0.29		
3.06	0.17	0.45	38.0	0.92	0.11	0.29		
86.55	2.58	15.80	1101.0	0.90	0.06	0.37		
86.55	3.48	15.80	1101.0	0.90	0.08	0.37		
20.11	0.61	0.66	246.7	0.93	0.06	0.07		
7.09	0.19	0.53	79.0	0.96	0.05	0.15		
5.38	0.50	1.25	76.0	0.81	0.18	0.46		
0.07	0.00	0.00	1.2	0.73	0.06	0.08		
0.07	0.00	0.00	1.2	0.73	0.06	0.08		
0.07	0.00	0.00	1.2	0.73	0.06	0.08		
0.07	0.00	0.00	1.2	0.73	0.06	0.08		
0.08	0.00	0.00	1.2	0.73	0.06	0.07		
42.83	1.60	5.09	572.7	0.85	0.07	0.24	X	X
42.01	1.45	4.99	572.7	0.84	0.07	0.24	X	X
42.88	1.22	5.09	572.7	0.85	0.06	0.24	X	X
42.99	1.19	5.11	572.7	0.86	0.06	0.24	X	X
44.72	1.34	5.07	587.4	0.87	0.06	0.23	X	X
15.42	2.92	6.69	243.0	0.72	0.38	0.87	X	X
0.59	0.13	0.64	6.0	0.96	0.45	2.20		
0.98	0.22	2.46	10.1	0.96	0.45	5.00		
13.17	0.40	0.79	152.7	0.96	0.06	0.12	X	
13.17	0.40	0.79	152.7	0.96	0.06	0.12	X	
2.78	0.55	1.39	47.0	0.67	0.39	1.00	X	
2.55	0.50	1.28	47.0	0.62	0.39	1.00	X	
4.39	0.76	0.56	50.0	0.96	0.35	0.26	X	X
1.65	0.26	0.82	32.1	0.59	0.32	1.00	X	X
18.09	0.64	1.09	232.9	0.89	0.07	0.12	X	X
32.40	0.87	1.94	405.4	0.91	0.05	0.12	X	X
92.73	2.78	4.64	1300.0	0.81	0.06	0.10	X	X
6.73	0.90	3.70	94.0	0.82	0.27	1.10	X	X
6.55	0.83	3.60	94.0	0.79	0.25	1.10	X	X
9.31	1.93	5.12	128.0	0.83	0.41	1.10	X	X
11.26	1.54	6.19	150.0	0.86	0.27	1.10	X	X
12.39	0.41	0.74	161.5	0.88	0.07	0.12	X	

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Ohio	COSHOCTON	CONESVILLE	Coal Steam	2840	4	SCR and Scrubber
2015	Ohio	COSHOCTON	CONESVILLE	Coal Steam	2840	5	SCR and Scrubber
2015	Ohio	COSHOCTON	CONESVILLE	Coal Steam	2840	6	SCR and Scrubber
2015	Ohio	CUYAHOGA	LAKE SHORE	Coal Steam	2838	18	No SCR or Scrubber >25 MW
2015	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	4	SCR and Scrubber
2015	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	5	SCR and Scrubber
2015	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	2	SCR and Scrubber
2015	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	3	SCR and Scrubber
2015	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	1	SCR and Scrubber
2015	Ohio	GALLIA	GEN J M GAVIN	Coal Steam	8102	1	SCR and Scrubber
2015	Ohio	GALLIA	GEN J M GAVIN	Coal Steam	8102	2	SCR and Scrubber
2015	Ohio	HAMILTON	MIAMI FORT	Coal Steam	2832	8	SCR and Scrubber
2015	Ohio	HAMILTON	MIAMI FORT	Coal Steam	2832	7	SCR and Scrubber
2015	Ohio	HAMILTON	MIAMI FORT	Coal Steam	2832	6	No SCR or Scrubber >25 MW
2015	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	6	Scrubber
2015	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	7	Scrubber
2015	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	5	SCR and Scrubber
2015	Ohio	JEFFERSON	CARDINAL	Coal Steam	2828	2	SCR and Scrubber
2015	Ohio	JEFFERSON	CARDINAL	Coal Steam	2828	1	SCR and Scrubber
2015	Ohio	JEFFERSON	CARDINAL	Coal Steam	2828	3	SCR and Scrubber
2015	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	1	SCR
2015	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	4	SCR
2015	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	3	No SCR or Scrubber >25 MW
2015	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	2	No SCR or Scrubber >25 MW
2015	Ohio	LAKE	EASTLAKE	Coal Steam	2837	5	Scrubber
2015	Ohio	LAKE	EASTLAKE	Coal Steam	2837	1	No SCR or Scrubber >25 MW
2015	Ohio	LAKE	EASTLAKE	Coal Steam	2837	2	No SCR or Scrubber >25 MW
2015	Ohio	LAKE	EASTLAKE	Coal Steam	2837	4	No SCR or Scrubber >25 MW
2015	Ohio	LAKE	EASTLAKE	Coal Steam	2837	3	No SCR or Scrubber >25 MW
2015	Ohio	LAKE	PAINESVILLE	Coal Steam	2936	3	No SCR or Scrubber <=25 MW
2015	Ohio	LAKE	PAINESVILLE	Coal Steam	2936	5	No SCR or Scrubber <=25 MW
2015	Ohio	LAKE	PAINESVILLE	Coal Steam	2936	4	No SCR or Scrubber <=25 MW
2015	Ohio	LORAIN	AVON LAKE	Coal Steam	2836	12	SCR and Scrubber
2015	Ohio	LORAIN	AVON LAKE	Coal Steam	2836	10	No SCR or Scrubber >25 MW
2015	Ohio	LUCAS	BAY SHORE	Coal Steam	2878	2	No SCR or Scrubber >25 MW
2015	Ohio	LUCAS	BAY SHORE	Coal Steam	2878	3	No SCR or Scrubber >25 MW
2015	Ohio	LUCAS	BAY SHORE	Coal Steam	2878	4	No SCR or Scrubber >25 MW
2015	Ohio	MIAMI	Piqua	Coal Steam	2937	10	No SCR or Scrubber <=25 MW
2015	Ohio	MIAMI	PIQUA	Coal Steam	2937	4	No SCR or Scrubber <=25 MW
2015	Ohio	MIAMI	PIQUA	Coal Steam	2937	5	No SCR or Scrubber <=25 MW
2015	Ohio	MIAMI	PIQUA	Coal Steam	2937	6	No SCR or Scrubber <=25 MW
2015	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-2	No SCR or Scrubber >25 MW
2015	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-1	No SCR or Scrubber >25 MW
2015	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-3	No SCR or Scrubber >25 MW
2015	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-4	No SCR or Scrubber >25 MW
2015	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-5	No SCR or Scrubber >25 MW
2015	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-6	No SCR or Scrubber >25 MW
2015	Ohio	PICKAWAY	PICWAY	Coal Steam	2843	9	No SCR or Scrubber >25 MW
2015	Ohio	RICHLAND	SHELBY	Coal Steam	2943	1	No SCR or Scrubber <=25 MW
2015	Ohio	RICHLAND	SHELBY	Coal Steam	2943	2	No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
56.27	1.65	3.38	763.6	0.84	0.06	0.12	X	
29.30	0.88	4.03	375.0	0.89	0.06	0.27	X	
28.33	0.85	3.90	375.0	0.86	0.06	0.27	X	
20.83	1.42	4.72	245.0	0.96	0.14	0.45	X	X
16.80	0.68	1.01	194.8	0.96	0.08	0.12	X	X
17.06	0.69	1.02	197.8	0.96	0.08	0.12	X	X
17.31	0.70	1.04	200.7	0.96	0.08	0.12	X	X
17.31	0.70	1.04	200.7	0.96	0.08	0.12	X	X
18.07	0.73	1.08	209.5	0.96	0.08	0.12	X	X
96.13	3.00	6.49	1300.0	0.84	0.06	0.13	X	X
95.56	2.75	6.45	1300.0	0.84	0.06	0.13	X	X
38.99	1.17	2.34	489.5	0.91	0.06	0.12	X	X
38.84	1.15	4.43	489.5	0.91	0.06	0.23	X	X
11.28	1.57	6.20	163.0	0.79	0.28	1.10	X	X
43.55	6.79	5.44	587.4	0.85	0.31	0.25	X	X
43.20	5.23	5.40	587.4	0.84	0.24	0.25	X	X
22.62	0.68	1.36	293.7	0.88	0.06	0.12	X	X
46.68	1.36	2.80	572.7	0.93	0.06	0.12	X	X
39.52	1.20	4.51	587.4	0.77	0.06	0.23	X	X
49.13	1.47	5.55	616.8	0.91	0.06	0.23	X	X
13.94	0.33	7.67	180.0	0.88	0.05	1.10	X	X
13.82	0.51	7.60	180.0	0.88	0.07	1.10	X	X
13.35	2.42	7.34	180.0	0.85	0.36	1.10	X	X
13.02	2.01	7.16	180.0	0.83	0.31	1.10	X	X
40.91	3.40	5.11	584.5	0.80	0.17	0.25	X	X
8.09	1.57	3.51	129.0	0.72	0.39	0.87	X	X
7.76	1.34	3.37	129.0	0.69	0.35	0.87	X	X
14.12	2.00	6.13	236.0	0.68	0.28	0.87	X	X
7.67	0.66	3.83	129.0	0.68	0.17	1.00	X	X
1.11	0.25	2.77	13.1	0.96	0.45	5.00	X	X
1.33	0.30	3.33	16.7	0.91	0.45	5.00	X	X
2.05	0.46	5.13	24.3	0.96	0.45	5.00	X	X
46.48	1.39	5.81	583.5	0.91	0.06	0.25	X	X
6.21	0.74	3.10	95.0	0.75	0.24	1.00	X	X
9.57	1.51	5.27	134.0	0.82	0.32	1.10		
9.94	2.62	5.47	142.0	0.80	0.53	1.10		
16.13	1.83	8.67	213.0	0.86	0.23	1.10		
0.07	0.02	0.10	0.8	0.96	0.45	3.00		
1.02	0.23	1.53	12.1	0.96	0.45	3.00		
1.02	0.23	1.53	12.1	0.96	0.45	3.00		
1.59	0.36	2.38	19.9	0.91	0.45	3.00		
3.70	0.51	1.85	55.0	0.77	0.28	1.00	X	
3.29	0.46	1.65	58.0	0.65	0.28	1.00	X	
3.29	0.43	1.64	63.0	0.60	0.26	1.00	X	
3.23	0.42	1.61	63.0	0.58	0.26	1.00	X	
3.35	0.43	1.68	63.0	0.61	0.26	1.00	X	
3.42	0.44	1.71	63.0	0.62	0.26	1.00	X	
4.89	1.02	2.44	90.0	0.62	0.42	1.00		
0.48	0.11	1.21	6.0	0.91	0.45	5.00		
0.48	0.11	1.21	6.0	0.91	0.45	5.00		

CAIR-CAMR-CAVR 2015

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Ohio	RICHLAND	SHELBY	Coal Steam	2943	4	No SCR or Scrubber <=25 MW
2015	Ohio	TRUMBULL	NILES	Coal Steam	2861	1	Scrubber
2015	Ohio	TUSCARAWAS	DOVER	Coal Steam	2914	4	No SCR or Scrubber <=25 MW
2015	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	1	SCR and Scrubber
2015	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	2	SCR and Scrubber
2015	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	3	SCR and Scrubber
2015	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	4	SCR and Scrubber
2015	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	5	SCR and Scrubber
2015	Ohio	WAYNE	ORRVILLE	Coal Steam	2935	13	No SCR or Scrubber >25 MW
2015	Ohio	WAYNE	ORRVILLE	Coal Steam	2935	12	No SCR or Scrubber >25 MW
2015	Ohio	WAYNE	ORRVILLE	Coal Steam	2935	10	No SCR or Scrubber <=25 MW
2015	Ohio	WAYNE	ORRVILLE	Coal Steam	2935	11	No SCR or Scrubber <=25 MW
2015	Pennsylvania	ALLEGHENY	CHESWICK	Coal Steam	8226	1	SCR and Scrubber
2015	Pennsylvania	ARMSTRONG	ARMSTRONG	Coal Steam	3178	2	Scrubber
2015	Pennsylvania	ARMSTRONG	ARMSTRONG	Coal Steam	3178	1	Scrubber
2015	Pennsylvania	ARMSTRONG	KEYSTONE	Coal Steam	3136	1	SCR and Scrubber
2015	Pennsylvania	ARMSTRONG	KEYSTONE	Coal Steam	3136	2	SCR and Scrubber
2015	Pennsylvania	BEAVER	AES BV Partners Beaver Valley	Coal Steam	10676	GEN2	Scrubber
2015	Pennsylvania	BEAVER	AES BV Partners Beaver Valley	Coal Steam	10676	GEN3	Scrubber
2015	Pennsylvania	BEAVER	BRUCE MANSFIELD	Coal Steam	6094	3	SCR and Scrubber
2015	Pennsylvania	BEAVER	BRUCE MANSFIELD	Coal Steam	6094	1	SCR and Scrubber
2015	Pennsylvania	BEAVER	BRUCE MANSFIELD	Coal Steam	6094	2	SCR and Scrubber
2015	Pennsylvania	CAMBRIA	Ebensburg Power Company	Coal Steam	10603	GEN1	Scrubber
2015	Pennsylvania	CAMBRIA	Cambria CoGen	Coal Steam	10641	GEN1	No SCR or Scrubber >25 MW
2015	Pennsylvania	CARBON	Panther Creek Energy Facility	Coal Steam	50776	GEN1	Scrubber
2015	Pennsylvania	CHESTER	CROMBY	Coal Steam	3159	1	Scrubber
2015	Pennsylvania	CLARION	Piney Creek Project	Coal Steam	54144	GEN1	Scrubber
2015	Pennsylvania	CLEARFIELD	SHAWVILLE	Coal Steam	3131	3	SCR and Scrubber
2015	Pennsylvania	CLEARFIELD	SHAWVILLE	Coal Steam	3131	4	SCR and Scrubber
2015	Pennsylvania	CLEARFIELD	SHAWVILLE	Coal Steam	3131	2	SCR and Scrubber
2015	Pennsylvania	CLEARFIELD	SHAWVILLE	Coal Steam	3131	1	No SCR or Scrubber >25 MW
2015	Pennsylvania	DELAWARE	Chester Operations	Coal Steam	50410	T5	Scrubber
2015	Pennsylvania	DELAWARE	EDDYSTONE	Coal Steam	3161	1	SCR and Scrubber
2015	Pennsylvania	DELAWARE	EDDYSTONE	Coal Steam	3161	2	SCR and Scrubber
2015	Pennsylvania	ERIE	General Electric Erie PA Power Station	Coal Steam	50358	STM2	No SCR or Scrubber <=25 MW
2015	Pennsylvania	ERIE	General Electric Erie PA Power Station	Coal Steam	50358	STM3	No SCR or Scrubber <=25 MW
2015	Pennsylvania	ERIE	General Electric Erie PA Power Station	Coal Steam	50358	STM4	No SCR or Scrubber <=25 MW
2015	Pennsylvania	GREENE	HATFIELD'S FERRY	Coal Steam	3179	1	Scrubber
2015	Pennsylvania	GREENE	HATFIELD'S FERRY	Coal Steam	3179	2	SCR and Scrubber
2015	Pennsylvania	GREENE	HATFIELD'S FERRY	Coal Steam	3179	3	SCR and Scrubber
2015	Pennsylvania	INDIANA	HOMER CITY	Coal Steam	3122	2	SCR and Scrubber
2015	Pennsylvania	INDIANA	HOMER CITY	Coal Steam	3122	1	SCR and Scrubber
2015	Pennsylvania	INDIANA	HOMER CITY	Coal Steam	3122	3	SCR and Scrubber
2015	Pennsylvania	INDIANA	CONEMAUGH	Coal Steam	3118	1	SCR and Scrubber
2015	Pennsylvania	INDIANA	CONEMAUGH	Coal Steam	3118	2	SCR and Scrubber
2015	Pennsylvania	LAWRENCE	NEW CASTLE	Coal Steam	3138	5	SCR and Scrubber
2015	Pennsylvania	LAWRENCE	NEW CASTLE	Coal Steam	3138	3	No SCR or Scrubber >25 MW
2015	Pennsylvania	LAWRENCE	NEW CASTLE	Coal Steam	3138	4	No SCR or Scrubber >25 MW
2015	Pennsylvania	MONTOUR	MONTOUR	Coal Steam	3149	2	SCR and Scrubber
2015	Pennsylvania	MONTOUR	MONTOUR	Coal Steam	3149	1	SCR and Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
0.60	0.13	1.49	7.1	0.96	0.45	5.00		
5.37	1.26	0.59	69.0	0.89	0.47	0.22		
1.21	0.27	1.81	15.1	0.91	0.45	3.00		
14.62	0.50	0.88	186.0	0.90	0.07	0.12	X	
14.64	0.51	0.88	186.0	0.90	0.07	0.12	X	
15.33	0.53	0.92	200.7	0.87	0.07	0.12	X	
15.19	0.52	0.91	200.7	0.86	0.07	0.12	X	
40.27	1.39	5.03	562.9	0.82	0.07	0.25	X	
1.76	0.40	0.88	30.0	0.67	0.45	1.00		
1.64	0.37	0.82	32.0	0.59	0.45	1.00		
1.11	0.25	2.77	10.3	0.96	0.45	5.00		
1.11	0.25	2.77	10.3	0.96	0.45	5.00		
42.40	1.27	4.58	550.2	0.88	0.06	0.22	X	X
12.99	1.57	0.78	167.4	0.89	0.24	0.12	X	X
12.73	1.67	0.76	168.4	0.86	0.26	0.12	X	X
60.30	1.48	5.97	832.2	0.83	0.05	0.20	X	X
59.24	1.47	5.86	832.2	0.81	0.05	0.20	X	X
2.29	0.47	0.13	28.9	0.91	0.41	0.11	X	X
7.79	1.61	0.43	98.1	0.91	0.41	0.11	X	X
52.89	1.68	4.36	805.0	0.75	0.06	0.17	X	X
53.22	1.62	6.31	781.0	0.78	0.06	0.24	X	X
53.17	1.57	6.30	785.0	0.77	0.06	0.24	X	X
4.39	0.20	0.48	51.0	0.96	0.09	0.22	X	
6.96	0.48	5.22	87.0	0.91	0.14	1.50	X	
8.91	0.54	0.73	82.6	0.96	0.12	0.16		
11.31	1.40	1.75	144.0	0.90	0.25	0.31	X	
3.45	0.27	0.56	31.9	0.96	0.16	0.33		
13.46	0.42	0.59	171.3	0.90	0.06	0.09		
13.50	0.43	0.59	171.3	0.90	0.06	0.09		
10.25	0.31	1.35	125.0	0.94	0.06	0.26		
7.59	1.84	4.17	122.0	0.71	0.48	1.10		
0.69	0.04	0.36	8.0	0.96	0.12	1.04	X	
22.18	0.71	1.61	279.0	0.91	0.06	0.15	X	
24.39	0.69	1.77	302.0	0.92	0.06	0.15	X	
0.08	0.02	0.09	1.1	0.91	0.45	2.20		
0.16	0.04	0.17	2.0	0.91	0.45	2.20		
0.16	0.04	0.17	2.0	0.91	0.45	2.20		
36.92	5.49	2.21	489.5	0.86	0.30	0.12	X	X
37.00	1.11	2.22	489.5	0.86	0.06	0.12	X	X
36.88	1.11	2.21	489.5	0.86	0.06	0.12	X	X
41.09	1.44	4.07	601.1	0.78	0.07	0.20	X	
44.33	1.45	4.39	607.0	0.83	0.07	0.20	X	
49.78	1.49	2.74	650.0	0.87	0.06	0.11	X	
60.33	1.83	1.33	850.0	0.81	0.06	0.04	X	
59.83	1.77	1.32	850.0	0.80	0.06	0.04	X	
11.86	0.36	0.71	134.1	0.96	0.06	0.12	X	X
5.54	0.99	4.16	98.0	0.65	0.36	1.50	X	X
5.50	0.91	4.13	98.0	0.64	0.33	1.50	X	X
50.55	1.73	5.00	729.4	0.79	0.07	0.20		
50.11	1.58	4.96	744.0	0.77	0.06	0.20		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Pennsylvania	NORTHAMPTON	Northhampton Generating Company L P	Coal Steam	50888	GEN1	Scrubber
2015	Pennsylvania	NORTHAMPTON	PORTLAND	Coal Steam	3113	2	SCR and Scrubber
2015	Pennsylvania	NORTHUMBERLAND	Foster Wheeler Mt Carmel Incorporated	Coal Steam	10343	TG1	Scrubber
2015	Pennsylvania	SCHUYLKILL	Wheeler Frackville Energy Company Inc	Coal Steam	50879	GEN1	Scrubber
2015	Pennsylvania	SCHUYLKILL	Kline Township Cogen Facil	Coal Steam	50039	GEN1	Scrubber
2015	Pennsylvania	SCHUYLKILL	St Nicholas Cogeneration Project	Coal Steam	54634	SNCP	No SCR or Scrubber >25 MW
2015	Pennsylvania	SNYDER	SUNBURY	Coal Steam	3152	4	No SCR or Scrubber >25 MW
2015	Pennsylvania	VENANGO	Scrubgrass Generating Company L P	Coal Steam	50974	GEN1	Scrubber
2015	Pennsylvania	WARREN	WARREN	Coal Steam	3132	1	No SCR or Scrubber <=25 MW
2015	Pennsylvania	WARREN	WARREN	Coal Steam	3132	2	No SCR or Scrubber <=25 MW
2015	Pennsylvania	WARREN	WARREN	Coal Steam	3132	3	No SCR or Scrubber <=25 MW
2015	Pennsylvania	WARREN	WARREN	Coal Steam	3132	4	No SCR or Scrubber <=25 MW
2015	Pennsylvania	WASHINGTON	ELRAMA	Coal Steam	3098	1	Scrubber
2015	Pennsylvania	WASHINGTON	ELRAMA	Coal Steam	3098	2	Scrubber
2015	Pennsylvania	WASHINGTON	ELRAMA	Coal Steam	3098	3	Scrubber
2015	Pennsylvania	WASHINGTON	ELRAMA	Coal Steam	3098	4	Scrubber
2015	Pennsylvania	WASHINGTON	MITCHELL	Coal Steam	3181	33	SCR and Scrubber
2015	Pennsylvania	YORK	BRUNNER ISLAND	Coal Steam	3140	2	SCR and Scrubber
2015	Pennsylvania	YORK	BRUNNER ISLAND	Coal Steam	3140	3	SCR and Scrubber
2015	Pennsylvania	YORK	BRUNNER ISLAND	Coal Steam	3140	1	No SCR or Scrubber >25 MW
2015	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN3	No SCR or Scrubber <=25 MW
2015	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN2	No SCR or Scrubber <=25 MW
2015	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN1	No SCR or Scrubber <=25 MW
2015	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN4	No SCR or Scrubber <=25 MW
2015	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN6	No SCR or Scrubber <=25 MW
2015	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN5	No SCR or Scrubber <=25 MW
2015	South Carolina	AIKEN	URQUHART	Coal Steam	3295	URQ3	No SCR or Scrubber >25 MW
2015	South Carolina	AIKEN	USDOE SRS (D-Area)	Coal Steam	7652	1	No SCR or Scrubber >25 MW
2015	South Carolina	ANDERSON	W S LEE	Coal Steam	3264	1	No SCR or Scrubber >25 MW
2015	South Carolina	ANDERSON	W S LEE	Coal Steam	3264	2	No SCR or Scrubber >25 MW
2015	South Carolina	ANDERSON	W S LEE	Coal Steam	3264	3	No SCR or Scrubber >25 MW
2015	South Carolina	BERKELEY	WILLIAMS	Coal Steam	3298	WIL1	SCR and Scrubber
2015	South Carolina	BERKELEY	CROSS	Coal Steam	130	2	SCR and Scrubber
2015	South Carolina	BERKELEY	CROSS	Coal Steam	130	1	SCR and Scrubber
2015	South Carolina	BERKELEY	JEFFERIES	Coal Steam	3319	3	SCR
2015	South Carolina	BERKELEY	JEFFERIES	Coal Steam	3319	4	No SCR or Scrubber >25 MW
2015	South Carolina	CHARLESTON	Cogen South	Coal Steam	7737	1	Scrubber
2015	South Carolina	COLLETON	CANADYS STEAM	Coal Steam	3280	CAN1	No SCR or Scrubber >25 MW
2015	South Carolina	COLLETON	CANADYS STEAM	Coal Steam	3280	CAN2	No SCR or Scrubber >25 MW
2015	South Carolina	COLLETON	CANADYS STEAM	Coal Steam	3280	CAN3	No SCR or Scrubber >25 MW
2015	South Carolina	DARLINGTON	H B ROBINSON	Coal Steam	3251	1	No SCR or Scrubber >25 MW
2015	South Carolina	GEORGETOWN	WINYAH	Coal Steam	6249	1	SCR and Scrubber
2015	South Carolina	GEORGETOWN	WINYAH	Coal Steam	6249	2	SCR and Scrubber
2015	South Carolina	GEORGETOWN	WINYAH	Coal Steam	6249	3	SCR and Scrubber
2015	South Carolina	GEORGETOWN	WINYAH	Coal Steam	6249	4	SCR and Scrubber
2015	South Carolina	HORRY	DOLPHUS M GRAINGER	Coal Steam	3317	1	No SCR or Scrubber >25 MW
2015	South Carolina	HORRY	DOLPHUS M GRAINGER	Coal Steam	3317	2	No SCR or Scrubber >25 MW
2015	South Carolina	LEXINGTON	MCMEEKIN	Coal Steam	3287	MCM1	No SCR or Scrubber >25 MW
2015	South Carolina	LEXINGTON	MCMEEKIN	Coal Steam	3287	MCM2	No SCR or Scrubber >25 MW
2015	South Carolina	ORANGEBURG	COPE	Coal Steam	7210	COP1	Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
8.79	0.53	0.48	102.0	0.96	0.12	0.11		
18.87	0.57	0.83	237.9	0.91	0.06	0.09		
3.48	0.18	0.28	40.4	0.96	0.10	0.16		
3.66	0.22	0.60	42.5	0.96	0.12	0.33		
4.27	0.26	0.70	49.6	0.96	0.12	0.33		
8.08	0.27	4.44	101.0	0.91	0.07	1.10		
7.77	1.17	4.27	128.0	0.69	0.30	1.10		
8.41	0.51	1.92	82.0	0.96	0.12	0.46		
2.07	0.47	2.27	20.5	0.96	0.45	2.20		
2.07	0.47	2.27	20.5	0.96	0.45	2.20		
2.21	0.50	2.43	20.5	0.96	0.45	2.20		
1.73	0.39	1.90	20.5	0.96	0.45	2.20		
8.98	1.38	0.74	97.0	0.96	0.31	0.16	X	X
8.66	1.33	0.71	97.0	0.96	0.31	0.16	X	X
9.87	1.52	0.81	109.0	0.96	0.31	0.16	X	X
13.77	2.12	1.14	171.0	0.92	0.31	0.16	X	X
21.41	0.53	1.77	275.0	0.89	0.05	0.17	X	X
27.43	0.79	1.21	370.1	0.85	0.06	0.09	X	
52.04	1.55	2.29	719.6	0.83	0.06	0.09	X	
22.64	4.09	12.45	321.0	0.81	0.36	1.10	X	
0.16	0.03	0.17	1.9	0.96	0.37	2.20	X	
0.18	0.05	0.20	2.2	0.96	0.57	2.20	X	
0.19	0.05	0.20	2.2	0.96	0.57	2.20	X	
0.22	0.04	0.24	2.7	0.91	0.37	2.20	X	
1.04	0.18	1.15	14.0	0.85	0.34	2.20	X	
1.25	0.17	1.37	16.0	0.89	0.27	2.20	X	
6.68	1.15	3.68	100.0	0.76	0.35	1.10		
2.11	0.47	1.16	35.0	0.69	0.45	1.10		
6.40	1.26	3.52	100.0	0.73	0.39	1.10		
6.09	1.26	3.35	100.0	0.70	0.41	1.10		
12.28	1.42	6.75	170.0	0.82	0.23	1.10		
39.91	1.22	1.27	548.2	0.83	0.06	0.06		
42.11	1.26	7.80	540.0	0.89	0.06	0.37		
44.85	1.35	2.59	560.0	0.91	0.06	0.12		
12.29	0.37	6.76	153.0	0.92	0.06	1.10		
11.15	2.42	6.13	153.0	0.83	0.43	1.10		
4.40	0.99	0.17	55.0	0.91	0.45	0.08		
8.78	1.51	4.83	125.0	0.80	0.34	1.10		
8.68	1.91	4.77	125.0	0.79	0.44	1.10		
13.77	2.86	7.57	180.0	0.87	0.42	1.10		
11.96	1.68	6.58	174.0	0.78	0.28	1.10		
21.05	0.63	0.70	264.3	0.91	0.06	0.07		
21.05	0.63	0.70	264.3	0.91	0.06	0.07		
21.05	0.63	1.58	270.0	0.89	0.06	0.15		
21.19	0.64	1.59	270.0	0.90	0.06	0.15		
6.04	1.35	3.32	85.0	0.81	0.45	1.10		
6.06	1.67	3.33	85.0	0.81	0.55	1.10		
8.99	1.76	4.94	126.0	0.81	0.39	1.10		
8.97	1.59	4.94	126.0	0.81	0.35	1.10		
27.08	3.28	1.49	385.0	0.80	0.24	0.11		

CAIR-CAMR-CAVR 2015

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	South Carolina	RICHLAND	WATEREE	Coal Steam	3297	WAT2	SCR and Scrubber
2015	South Carolina	RICHLAND	WATEREE	Coal Steam	3297	WAT1	SCR
2015	South Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	South Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	South Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	South Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	South Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	Tennessee	ANDERSON	BULL RUN	Coal Steam	3396	1	SCR and Scrubber
2015	Tennessee	HAWKINS	JOHN SEVIER	Coal Steam	3405	1	SCR
2015	Tennessee	HAWKINS	JOHN SEVIER	Coal Steam	3405	2	SCR
2015	Tennessee	HAWKINS	JOHN SEVIER	Coal Steam	3405	3	SCR
2015	Tennessee	HAWKINS	JOHN SEVIER	Coal Steam	3405	4	SCR
2015	Tennessee	HUMPHREYS	JOHNSONVILLE	Coal Steam	3406	10	SCR
2015	Tennessee	HUMPHREYS	JOHNSONVILLE	Coal Steam	3406	9	SCR
2015	Tennessee	ROANE	KINGSTON	Coal Steam	3407	9	SCR and Scrubber
2015	Tennessee	ROANE	KINGSTON	Coal Steam	3407	1	SCR
2015	Tennessee	ROANE	KINGSTON	Coal Steam	3407	2	SCR
2015	Tennessee	ROANE	KINGSTON	Coal Steam	3407	3	SCR
2015	Tennessee	ROANE	KINGSTON	Coal Steam	3407	4	SCR
2015	Tennessee	ROANE	KINGSTON	Coal Steam	3407	5	SCR
2015	Tennessee	ROANE	KINGSTON	Coal Steam	3407	6	SCR
2015	Tennessee	ROANE	KINGSTON	Coal Steam	3407	7	SCR
2015	Tennessee	ROANE	KINGSTON	Coal Steam	3407	8	SCR
2015	Tennessee	SHELBY	ALLEN	Coal Steam	3393	1	SCR
2015	Tennessee	SHELBY	ALLEN	Coal Steam	3393	2	SCR
2015	Tennessee	SHELBY	ALLEN	Coal Steam	3393	3	SCR
2015	Tennessee	STEWART	CUMBERLAND	Coal Steam	3399	2	SCR and Scrubber
2015	Tennessee	STEWART	CUMBERLAND	Coal Steam	3399	1	SCR and Scrubber
2015	Tennessee	SUMNER	GALLATIN	Coal Steam	3403	1	No SCR or Scrubber >25 MW
2015	Tennessee	SUMNER	GALLATIN	Coal Steam	3403	2	No SCR or Scrubber >25 MW
2015	Tennessee	SUMNER	GALLATIN	Coal Steam	3403	3	No SCR or Scrubber >25 MW
2015	Tennessee	SUMNER	GALLATIN	Coal Steam	3403	4	No SCR or Scrubber >25 MW
2015	Texas	ATASCOSA	SAN MIGUEL	Coal Steam	6183	SM-1	Scrubber
2015	Texas	BEXAR	J K SPRUCE	Coal Steam	7097	BLR1	Scrubber
2015	Texas	BEXAR	J T DEELY	Coal Steam	6181	1	No SCR or Scrubber >25 MW
2015	Texas	BEXAR	J T DEELY	Coal Steam	6181	2	No SCR or Scrubber >25 MW
2015	Texas	FAYETTE	SAM SEYMOUR	Coal Steam	6179	3	Scrubber
2015	Texas	FAYETTE	SAM SEYMOUR	Coal Steam	6179	1	No SCR or Scrubber >25 MW
2015	Texas	FAYETTE	SAM SEYMOUR	Coal Steam	6179	2	No SCR or Scrubber >25 MW
2015	Texas	FORT BEND	W A PARISH	Coal Steam	3470	WAP7	SCR and Scrubber
2015	Texas	FORT BEND	W A PARISH	Coal Steam	3470	WAP5	SCR and Scrubber
2015	Texas	FORT BEND	W A PARISH	Coal Steam	3470	WAP6	SCR and Scrubber
2015	Texas	FORT BEND	W A PARISH	Coal Steam	3470	WAP8	SCR and Scrubber
2015	Texas	FREESTONE	BIG BROWN	Coal Steam	3497	1	No SCR or Scrubber >25 MW
2015	Texas	FREESTONE	BIG BROWN	Coal Steam	3497	2	No SCR or Scrubber >25 MW
2015	Texas	GOLIAD	COLETO CREEK	Coal Steam	6178	1	No SCR or Scrubber >25 MW
2015	Texas	GRAY	Celanese	Coal Steam	7678	2	No SCR or Scrubber >25 MW
2015	Texas	GRIMES	GIBBONS CREEK	Coal Steam	6136	1	Scrubber
2015	Texas	HARRISON	PIRKEY	Coal Steam	7902	1	Scrubber
2015	Texas	LAMB	TOLK STATION	Coal Steam	6194	171B	No SCR or Scrubber >25 MW

CAIR-CAMR-CAVR 2015

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
27.29	0.80	0.87	342.7	0.91	0.06	0.06		
27.31	0.82	15.02	350.0	0.89	0.06	1.10		
0.06	0.00	0.00	1.0	0.73	0.06	0.08		
0.06	0.00	0.00	1.0	0.73	0.06	0.08		
0.06	0.00	0.00	1.0	0.73	0.06	0.08		
0.06	0.00	0.00	1.0	0.73	0.06	0.08		
0.07	0.00	0.00	1.0	0.73	0.06	0.07		
69.26	2.08	8.66	849.8	0.93	0.06	0.25	X	X
13.21	0.39	7.26	176.0	0.86	0.06	1.10		
13.26	0.40	7.29	176.0	0.86	0.06	1.10		
12.84	0.39	7.06	176.0	0.83	0.06	1.10		
13.19	0.40	7.25	176.0	0.86	0.06	1.10		
9.74	0.29	4.87	141.0	0.79	0.06	1.00		
10.95	0.33	5.47	141.0	0.89	0.06	1.00		
15.03	0.45	0.47	174.3	0.96	0.06	0.06	X	X
10.66	0.36	5.86	136.0	0.89	0.07	1.10	X	X
10.66	0.36	5.86	136.0	0.89	0.07	1.10	X	X
10.66	0.36	5.86	136.0	0.89	0.07	1.10	X	X
10.66	0.36	5.86	136.0	0.89	0.07	1.10	X	X
13.96	0.48	7.68	178.0	0.89	0.07	1.10	X	X
13.96	0.34	7.68	178.0	0.89	0.05	1.10	X	X
13.96	0.34	7.68	178.0	0.89	0.05	1.10	X	X
13.96	0.34	7.68	178.0	0.89	0.05	1.10	X	X
18.54	0.66	6.95	248.0	0.85	0.07	0.75		
19.69	0.71	7.13	248.0	0.91	0.07	0.72		
19.84	0.69	7.18	248.0	0.91	0.07	0.72		
95.49	3.75	11.94	1224.0	0.89	0.08	0.25		
96.58	2.01	12.07	1238.0	0.89	0.04	0.25		
16.63	2.36	9.15	225.0	0.84	0.28	1.10		
16.85	2.39	9.26	225.0	0.85	0.28	1.10		
19.33	3.38	10.63	263.0	0.84	0.35	1.10		
19.11	3.34	10.51	263.0	0.83	0.35	1.10		
34.49	4.16	5.70	391.0	0.96	0.24	0.33		
35.23	2.43	4.35	530.0	0.76	0.14	0.25		
31.51	2.06	10.84	405.0	0.89	0.13	0.69		
30.99	2.03	10.66	405.0	0.87	0.13	0.69		
33.64	2.41	2.51	435.0	0.88	0.14	0.15		
45.25	4.07	15.43	580.0	0.89	0.18	0.68		
45.22	3.12	15.42	580.0	0.89	0.14	0.68		
40.81	1.24	9.53	553.5	0.84	0.06	0.47		
46.19	1.50	10.78	642.4	0.82	0.07	0.47		
47.13	1.28	11.00	642.4	0.84	0.05	0.47		
43.22	1.30	5.83	555.0	0.89	0.06	0.27		
46.29	3.57	23.15	575.0	0.92	0.15	1.00		
47.29	3.73	23.65	575.0	0.94	0.16	1.00		
47.35	4.26	16.10	632.0	0.86	0.18	0.68		
2.32	0.52	1.16	26.0	0.96	0.45	1.00		
31.96	1.87	1.34	405.0	0.90	0.12	0.08		
48.51	4.63	17.59	580.0	0.95	0.19	0.73		
40.05	2.70	11.49	540.0	0.85	0.13	0.57		

CAIR-CAMR-CAVR 2015

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Texas	LAMB	TOLK STATION	Coal Steam	6194	172B	No SCR or Scrubber >25 MW
2015	Texas	LIMESTONE	LIMESTONE	Coal Steam	298	LIM2	Scrubber
2015	Texas	LIMESTONE	LIMESTONE	Coal Steam	298	LIM1	Scrubber
2015	Texas	MILAM	SANDOW	Coal Steam	6648	4	Scrubber
2015	Texas	POTTER	HARRINGTON STATION	Coal Steam	6193	061B	No SCR or Scrubber >25 MW
2015	Texas	POTTER	HARRINGTON STATION	Coal Steam	6193	062B	No SCR or Scrubber >25 MW
2015	Texas	POTTER	HARRINGTON STATION	Coal Steam	6193	063B	No SCR or Scrubber >25 MW
2015	Texas	ROBERTSON	TNP ONE	Coal Steam	7030	U1	Scrubber
2015	Texas	ROBERTSON	TNP ONE	Coal Steam	7030	U2	Scrubber
2015	Texas	RUSK	MARTIN LAKE	Coal Steam	6146	1	Scrubber
2015	Texas	RUSK	MARTIN LAKE	Coal Steam	6146	2	Scrubber
2015	Texas	RUSK	MARTIN LAKE	Coal Steam	6146	3	Scrubber
2015	Texas	TITUS	MONTICELLO	Coal Steam	6147	3	Scrubber
2015	Texas	TITUS	WELSH	Coal Steam	6139	2	SCR
2015	Texas	TITUS	WELSH	Coal Steam	6139	3	SCR
2015	Texas	TITUS	MONTICELLO	Coal Steam	6147	1	No SCR or Scrubber >25 MW
2015	Texas	TITUS	MONTICELLO	Coal Steam	6147	2	No SCR or Scrubber >25 MW
2015	Texas	TITUS	WELSH	Coal Steam	6139	1	No SCR or Scrubber >25 MW
2015	Texas	WILBARGER	OKLAUNION	Coal Steam	127	1	Scrubber
2015	Texas		NEW	Coal Steam			No SCR or Scrubber >25 MW
2015	Virginia	ALEXANDRIA (CITY)	POTOMAC RIVER	Coal Steam	3788	5	No SCR or Scrubber >25 MW
2015	Virginia	ALEXANDRIA (CITY)	POTOMAC RIVER	Coal Steam	3788	3	No SCR or Scrubber >25 MW
2015	Virginia	ALEXANDRIA (CITY)	POTOMAC RIVER	Coal Steam	3788	4	No SCR or Scrubber >25 MW
2015	Virginia	CAMPBELL	LG&E Westmoreland Altavista	Coal Steam	10773	GEN1	Scrubber
2015	Virginia	CHESAPEAKE (CITY)	CHESAPEAKE	Coal Steam	3803	4	SCR and Scrubber
2015	Virginia	CHESAPEAKE (CITY)	CHESAPEAKE	Coal Steam	3803	3	SCR
2015	Virginia	CHESAPEAKE (CITY)	CHESAPEAKE	Coal Steam	3803	1	No SCR or Scrubber >25 MW
2015	Virginia	CHESAPEAKE (CITY)	CHESAPEAKE	Coal Steam	3803	2	No SCR or Scrubber >25 MW
2015	Virginia	CHESTERFIELD	CHESTERFIELD	Coal Steam	3797	5	SCR and Scrubber
2015	Virginia	CHESTERFIELD	CHESTERFIELD	Coal Steam	3797	6	SCR and Scrubber
2015	Virginia	CHESTERFIELD	CHESTERFIELD	Coal Steam	3797	4	SCR
2015	Virginia	CHESTERFIELD	CHESTERFIELD	Coal Steam	3797	3	No SCR or Scrubber >25 MW
2015	Virginia	FLUVANNA	BREMO POWER STATION	Coal Steam	3796	3	No SCR or Scrubber >25 MW
2015	Virginia	FLUVANNA	BREMO POWER STATION	Coal Steam	3796	4	No SCR or Scrubber >25 MW
2015	Virginia	GILES	GLEN LYN	Coal Steam	3776	6	SCR and Scrubber
2015	Virginia	GILES	GLEN LYN	Coal Steam	3776	51	No SCR or Scrubber >25 MW
2015	Virginia	GILES	GLEN LYN	Coal Steam	3776	52	No SCR or Scrubber >25 MW
2015	Virginia	HALIFAX	CLOVER	Coal Steam	7213	1	Scrubber
2015	Virginia	HALIFAX	CLOVER	Coal Steam	7213	2	Scrubber
2015	Virginia	HOPEWELL (CITY)	LG&E Westmoreland Hopewell	Coal Steam	10771	GEN1	Scrubber
2015	Virginia	HOPEWELL (CITY)	Cogentrix Hopewell	Coal Steam	10377	GEN1	No SCR or Scrubber >25 MW
2015	Virginia	HOPEWELL (CITY)	Cogentrix Hopewell	Coal Steam	10377	GEN2	No SCR or Scrubber >25 MW
2015	Virginia	KING GEORGE	SEI Birchwood Power Facility	Coal Steam	54304	1	SCR and Scrubber
2015	Virginia	MECKLENBURG	Mecklenburg Cogeneration Facility	Coal Steam	52007	GEN1	Scrubber
2015	Virginia	MECKLENBURG	Mecklenburg Cogeneration Facility	Coal Steam	52007	GEN2	Scrubber
2015	Virginia	PORTSMOUTH (CITY)	Cogentrix Portsmouth	Coal Steam	10071	GEN1	No SCR or Scrubber <=25 MW
2015	Virginia	PORTSMOUTH (CITY)	Cogentrix Portsmouth	Coal Steam	10071	GEN2	No SCR or Scrubber <=25 MW
2015	Virginia	RICHMOND (CITY)	Cogentrix of Richmond Incorporated	Coal Steam	54081	GEN1	Scrubber
2015	Virginia	RICHMOND (CITY)	Cogentrix of Richmond Incorporated	Coal Steam	54081	GEN2	Scrubber
2015	Virginia	RICHMOND (CITY)	Cogentrix of Richmond Incorporated	Coal Steam	54081	GEN3	Scrubber

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
36.47	2.51	10.47	540.0	0.77	0.14	0.57		
56.44	4.80	2.37	720.0	0.89	0.17	0.08		
57.67	4.89	9.53	720.0	0.91	0.17	0.33		
44.28	5.49	7.32	545.0	0.93	0.25	0.33		
25.98	1.78	7.11	346.0	0.86	0.14	0.55		
27.50	1.91	7.89	360.0	0.87	0.14	0.57		
26.89	1.85	7.72	360.0	0.85	0.14	0.57		
12.54	1.23	0.84	150.0	0.95	0.20	0.13		
12.45	1.09	0.83	150.0	0.95	0.18	0.13		
59.77	8.48	9.88	750.0	0.91	0.28	0.33		
63.11	5.23	10.43	750.0	0.96	0.17	0.33		
65.27	5.09	10.79	750.0	0.96	0.16	0.33		
62.57	5.81	10.34	750.0	0.95	0.19	0.33		
41.48	4.90	11.45	528.0	0.90	0.24	0.55		
41.49	2.32	11.45	528.0	0.90	0.11	0.55		
38.30	3.04	19.15	565.0	0.77	0.16	1.00		
39.40	4.55	19.70	565.0	0.80	0.23	1.00		
42.20	3.61	11.65	528.0	0.91	0.17	0.55		
52.80	6.23	7.08	676.0	0.89	0.24	0.27		
13.35	0.40	0.50	206.2	0.74	0.06	0.07		
7.56	1.48	4.16	102.0	0.85	0.39	1.10	X	
7.19	1.48	3.95	102.0	0.80	0.41	1.10	X	
7.21	1.41	3.97	102.0	0.81	0.39	1.10	X	
4.99	0.44	0.78	57.1	0.96	0.18	0.31		
17.30	0.54	1.13	212.5	0.93	0.06	0.13		
11.52	0.36	6.34	156.0	0.84	0.06	1.10		
8.38	1.24	4.61	111.0	0.86	0.30	1.10		
8.13	1.03	4.47	111.0	0.84	0.25	1.10		
26.01	0.78	1.56	319.2	0.93	0.06	0.12		
55.05	1.50	3.63	696.5	0.90	0.05	0.13		
12.40	0.38	6.82	166.0	0.85	0.06	1.10		
6.63	0.80	3.65	100.0	0.76	0.24	1.10		
4.75	0.84	2.61	71.0	0.76	0.35	1.10		
10.55	1.49	5.80	156.0	0.77	0.28	1.10		
16.59	0.52	2.63	231.3	0.82	0.06	0.32		
2.64	0.60	1.45	45.0	0.67	0.46	1.10		
2.95	0.59	1.62	45.0	0.75	0.40	1.10		
31.40	3.08	1.57	441.0	0.81	0.20	0.10		
31.75	3.07	1.59	441.0	0.82	0.19	0.10		
4.86	0.43	0.76	56.9	0.96	0.18	0.31		
2.87	0.65	1.58	39.0	0.84	0.45	1.10		
2.87	0.65	1.58	39.0	0.84	0.45	1.10		
15.94	0.48	2.79	199.0	0.91	0.06	0.35		
4.84	0.77	0.49	61.0	0.91	0.32	0.20		
4.84	0.77	0.49	61.0	0.91	0.32	0.20		
1.94	0.44	1.07	24.5	0.91	0.45	1.10		
1.94	0.44	1.07	24.5	0.91	0.45	1.10		
4.78	1.08	0.36	60.3	0.91	0.45	0.15		
4.78	1.08	0.36	60.3	0.91	0.45	0.15		
4.78	1.08	0.36	60.3	0.91	0.45	0.15		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Virginia	RICHMOND (CITY)	Cogentrix of Richmond Incorporated	Coal Steam	54081	GEN4	Scrubber
2015	Virginia	RUSSELL	CLINCH RIVER	Coal Steam	3775	1	SCR and Scrubber
2015	Virginia	RUSSELL	CLINCH RIVER	Coal Steam	3775	2	SCR and Scrubber
2015	Virginia	RUSSELL	CLINCH RIVER	Coal Steam	3775	3	SCR and Scrubber
2015	Virginia	SOUTHAMPTON	LG&E Westmoreland Southampton	Coal Steam	10774	GEN1	Scrubber
2015	Virginia	YORK	YORKTOWN	Coal Steam	3809	1	No SCR or Scrubber >25 MW
2015	Virginia	YORK	YORKTOWN	Coal Steam	3809	2	No SCR or Scrubber >25 MW
2015	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	West Virginia	GRANT	NORTH BRANCH POWER STATION	Coal Steam	7537	1B	Scrubber
2015	West Virginia	GRANT	NORTH BRANCH POWER STATION	Coal Steam	7537	1A	Scrubber
2015	West Virginia	GRANT	MT STORM	Coal Steam	3954	1	SCR and Scrubber
2015	West Virginia	GRANT	MT STORM	Coal Steam	3954	2	SCR and Scrubber
2015	West Virginia	GRANT	MT STORM	Coal Steam	3954	3	SCR and Scrubber
2015	West Virginia	HARRISON	HARRISON	Coal Steam	3944	1	SCR and Scrubber
2015	West Virginia	HARRISON	HARRISON	Coal Steam	3944	2	SCR and Scrubber
2015	West Virginia	HARRISON	HARRISON	Coal Steam	3944	3	SCR and Scrubber
2015	West Virginia	KANAWHA	KANAWHA RIVER	Coal Steam	3936	1	SCR and Scrubber
2015	West Virginia	KANAWHA	KANAWHA RIVER	Coal Steam	3936	2	SCR and Scrubber
2015	West Virginia	MARION	Grant Town Power Plant	Coal Steam	10151	GEN1	Scrubber
2015	West Virginia	MARSHALL	KAMMER	Coal Steam	3947	1	SCR and Scrubber
2015	West Virginia	MARSHALL	KAMMER	Coal Steam	3947	2	SCR and Scrubber
2015	West Virginia	MARSHALL	KAMMER	Coal Steam	3947	3	SCR and Scrubber
2015	West Virginia	MARSHALL	MITCHELL	Coal Steam	3948	1	SCR and Scrubber
2015	West Virginia	MARSHALL	MITCHELL	Coal Steam	3948	2	SCR and Scrubber
2015	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	11	SCR and Scrubber
2015	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	21	SCR and Scrubber
2015	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	31	SCR and Scrubber
2015	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	41	SCR and Scrubber
2015	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	51	SCR and Scrubber
2015	West Virginia	MASON	MOUNTAINEER	Coal Steam	6264	1	SCR and Scrubber
2015	West Virginia	MONONGALIA	FORT MARTIN	Coal Steam	3943	2	Scrubber
2015	West Virginia	MONONGALIA	Morgantown Energy Facility	Coal Steam	10743	GEN1	Scrubber
2015	West Virginia	MONONGALIA	FORT MARTIN	Coal Steam	3943	1	SCR and Scrubber
2015	West Virginia	PLEASANTS	WILLOW ISLAND	Coal Steam	3946	2	SCR and Scrubber
2015	West Virginia	PLEASANTS	PLEASANTS	Coal Steam	6004	1	SCR and Scrubber
2015	West Virginia	PLEASANTS	PLEASANTS	Coal Steam	6004	2	SCR and Scrubber
2015	West Virginia	PRESTON	ALBRIGHT	Coal Steam	3942	3	SCR and Scrubber
2015	West Virginia	PUTNAM	JOHN E AMOS	Coal Steam	3935	1	SCR and Scrubber
2015	West Virginia	PUTNAM	JOHN E AMOS	Coal Steam	3935	2	SCR and Scrubber
2015	West Virginia	PUTNAM	JOHN E AMOS	Coal Steam	3935	3	SCR and Scrubber
2015	West Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	West Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	West Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	West Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	West Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2015	Wisconsin	ASHLAND	BAY FRONT	Coal Steam	3982	1	No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
4.78	1.08	0.36	60.3	0.91	0.45	0.15		
16.50	0.50	2.62	226.4	0.83	0.06	0.32		
16.27	0.50	2.58	226.4	0.82	0.06	0.32		
16.17	0.44	2.57	226.4	0.82	0.05	0.32		
3.20	0.60	0.50	35.0	0.96	0.38	0.31		
11.22	1.72	6.17	159.0	0.81	0.31	1.10		
11.86	1.82	6.52	167.0	0.81	0.31	1.10		
0.06	0.00	0.00	0.9	0.73	0.06	0.08		
0.06	0.00	0.00	0.9	0.73	0.06	0.08		
0.06	0.00	0.00	0.9	0.73	0.06	0.08		
0.06	0.00	0.00	0.9	0.73	0.06	0.08		
0.06	0.00	0.00	0.9	0.73	0.06	0.07		
3.71	0.55	0.58	37.0	0.96	0.30	0.31		
2.96	0.44	0.46	37.0	0.91	0.30	0.31		
42.55	1.36	5.32	533.0	0.91	0.06	0.25		
42.55	1.36	5.32	533.0	0.91	0.06	0.25		
38.98	1.17	4.87	521.0	0.85	0.06	0.25		
49.93	1.50	2.50	640.0	0.89	0.06	0.10		
49.93	1.50	2.50	640.0	0.89	0.06	0.10		
49.93	1.50	2.50	640.0	0.69	0.06	0.10		
14.20	0.43	0.85	190.9	0.85	0.06	0.12	X	
14.32	0.43	0.86	190.9	0.86	0.06	0.12	X	
8.42	1.26	0.97	84.0	0.96	0.30	0.23		
14.37	0.52	0.86	195.8	0.84	0.07	0.12	X	
14.30	0.52	0.86	195.8	0.83	0.07	0.12	X	
14.02	0.51	0.84	195.8	0.82	0.07	0.12	X	
58.01	2.03	7.66	800.0	0.83	0.07	0.26	X	
57.39	2.01	7.58	800.0	0.62	0.07	0.26	X	
11.19	0.40	0.67	141.9	0.90	0.07	0.12	X	X
11.09	0.39	0.67	141.9	0.89	0.07	0.12	X	X
10.41	0.37	0.62	141.9	0.84	0.07	0.12	X	X
10.63	0.36	0.64	141.9	0.85	0.07	0.12	X	X
31.42	0.72	1.89	430.7	0.83	0.05	0.12	X	X
101.37	3.04	13.38	1300.0	0.89	0.06	0.26	X	X
39.92	4.19	4.99	543.4	0.84	0.21	0.25		
4.80	0.72	0.55	60.0	0.91	0.30	0.23		
39.85	1.20	4.45	540.4	0.84	0.06	0.22		
14.03	0.42	0.84	177.2	0.90	0.06	0.12	X	X
45.07	1.28	4.96	614.0	0.84	0.06	0.22	X	X
44.33	1.40	4.88	614.0	0.82	0.06	0.22	X	X
10.54	0.32	0.63	134.1	0.90	0.06	0.12		
62.38	1.78	7.53	783.2	0.91	0.06	0.24	X	
62.38	1.78	7.53	783.2	0.91	0.06	0.24	X	
101.38	4.02	12.23	1272.7	0.91	0.08	0.24	X	
0.00	0.00	0.00	0.1	0.73	0.06	0.08		
0.00	0.00	0.00	0.1	0.73	0.06	0.08		
0.00	0.00	0.00	0.1	0.73	0.06	0.08		
0.00	0.00	0.00	0.1	0.73	0.06	0.06		
0.01	0.00	0.00	0.1	0.73	0.06	0.07		
2.70	0.51	1.89	25.0	0.96	0.38	1.40		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2015	Wisconsin	ASHLAND	BAY FRONT	Coal Steam	3982	2	No SCR or Scrubber <=25 MW
2015	Wisconsin	ASHLAND	BAY FRONT	Coal Steam	3982	5	No SCR or Scrubber <=25 MW
2015	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	4	No SCR or Scrubber >25 MW
2015	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	3	No SCR or Scrubber >25 MW
2015	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	5	No SCR or Scrubber >25 MW
2015	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	6	No SCR or Scrubber >25 MW
2015	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	7	No SCR or Scrubber >25 MW
2015	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	8	No SCR or Scrubber >25 MW
2015	Wisconsin	BUFFALO	J P MADGETT	Coal Steam	4271	B1	SCR
2015	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B4	No SCR or Scrubber >25 MW
2015	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B5	No SCR or Scrubber >25 MW
2015	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B1	No SCR or Scrubber <=25 MW
2015	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B2	No SCR or Scrubber <=25 MW
2015	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B3	No SCR or Scrubber <=25 MW
2015	Wisconsin	COLUMBIA	COLUMBIA	Coal Steam	8023	2	No SCR or Scrubber >25 MW
2015	Wisconsin	COLUMBIA	COLUMBIA	Coal Steam	8023	1	No SCR or Scrubber >25 MW
2015	Wisconsin	DANE	BLOUNT STREET	Coal Steam	3992	9	No SCR or Scrubber >25 MW
2015	Wisconsin	DANE	BLOUNT STREET	Coal Steam	3992	8	No SCR or Scrubber >25 MW
2015	Wisconsin	DANE	BLOUNT STREET	Coal Steam	3992	7	No SCR or Scrubber <=25 MW
2015	Wisconsin	DANE	UW Madison Charter St Plant	Coal Steam	54408	1	No SCR or Scrubber <=25 MW
2015	Wisconsin	GRANT	NELSON DEWEY	Coal Steam	4054	1	SCR
2015	Wisconsin	GRANT	NELSON DEWEY	Coal Steam	4054	2	SCR
2015	Wisconsin	KENOSHA	PLEASANT PRAIRIE	Coal Steam	6170	2	SCR and Scrubber
2015	Wisconsin	KENOSHA	PLEASANT PRAIRIE	Coal Steam	6170	1	SCR and Scrubber
2015	Wisconsin	MANITOWOC	MANITOWOC	Coal Steam	4125	8	Scrubber
2015	Wisconsin	MANITOWOC	MANITOWOC	Coal Steam	4125	6	No SCR or Scrubber <=25 MW
2015	Wisconsin	MANITOWOC	MANITOWOC	Coal Steam	4125	7	No SCR or Scrubber <=25 MW
2015	Wisconsin	MARATHON	WESTON	Coal Steam	4078	1	No SCR or Scrubber >25 MW
2015	Wisconsin	MARATHON	WESTON	Coal Steam	4078	2	No SCR or Scrubber >25 MW
2015	Wisconsin	MARATHON	WESTON	Coal Steam	4078	3	No SCR or Scrubber >25 MW
2015	Wisconsin	MILWAUKEE	SOUTH OAK CREEK	Coal Steam	4041	5	SCR and Scrubber
2015	Wisconsin	MILWAUKEE	SOUTH OAK CREEK	Coal Steam	4041	6	SCR and Scrubber
2015	Wisconsin	MILWAUKEE	SOUTH OAK CREEK	Coal Steam	4041	7	SCR and Scrubber
2015	Wisconsin	MILWAUKEE	SOUTH OAK CREEK	Coal Steam	4041	8	SCR and Scrubber
2015	Wisconsin	MILWAUKEE	VALLEY	Coal Steam	4042	4	No SCR or Scrubber >25 MW
2015	Wisconsin	MILWAUKEE	VALLEY	Coal Steam	4042	1	No SCR or Scrubber >25 MW
2015	Wisconsin	MILWAUKEE	VALLEY	Coal Steam	4042	2	No SCR or Scrubber >25 MW
2015	Wisconsin	MILWAUKEE	VALLEY	Coal Steam	4042	3	No SCR or Scrubber >25 MW
2015	Wisconsin	MILWAUKEE	Milwaukee County	Coal Steam	7549	NA	No SCR or Scrubber <=25 MW
2015	Wisconsin	SHEBOYGAN	EDGEWATER	Coal Steam	4050	4	SCR
2015	Wisconsin	SHEBOYGAN	EDGEWATER	Coal Steam	4050	3	No SCR or Scrubber >25 MW
2015	Wisconsin	SHEBOYGAN	EDGEWATER	Coal Steam	4050	5	No SCR or Scrubber >25 MW
2015	Wisconsin	VERNON	GENOA	Coal Steam	4143	1	SCR
2015	Wisconsin	WINNEBAGO	MENASHA	Coal Steam	4127	B23	No SCR or Scrubber <=25 MW
2015	Wisconsin	WINNEBAGO	MENASHA	Coal Steam	4127	B24	No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NO_x Emission (MTon)	Total SO_2 Emission (MTon)	Capacity (MW)	Capacity Factor	NO_x Emission Rate	SO_2 Emission Rate	Current $PM_{2.5}$ Nonattainment Area	Projected $PM_{2.5}$ Nonattainment Area 2015
2.70	0.45	1.89	25.0	0.96	0.33	1.40		
2.11	0.94	1.48	25.0	0.96	0.89	1.40		
2.11	0.24	0.49	27.0	0.90	0.23	0.46		
2.24	0.26	0.52	28.6	0.90	0.23	0.46		
4.54	0.52	1.05	50.1	0.96	0.23	0.46		
6.02	0.69	1.40	70.8	0.96	0.23	0.46		
6.76	0.93	1.57	86.6	0.89	0.27	0.46		
11.20	1.15	2.48	144.0	0.89	0.21	0.44		
30.53	0.92	8.23	377.0	0.92	0.06	0.54		
3.91	0.70	1.96	57.0	0.78	0.36	1.00		
5.69	1.02	2.84	87.0	0.75	0.36	1.00		
1.98	0.72	1.38	19.7	0.96	0.73	1.40		
1.66	0.61	1.16	19.7	0.96	0.73	1.40		
1.99	0.73	1.40	23.6	0.96	0.73	1.40		
39.83	2.93	14.56	525.0	0.87	0.15	0.73		
41.09	2.47	14.67	525.0	0.89	0.12	0.71		
3.25	0.55	1.63	48.7	0.76	0.34	1.00		
3.49	0.56	1.74	49.3	0.81	0.32	1.00		
2.56	0.78	1.28	24.0	0.96	0.61	1.00		
0.28	0.07	0.14	4.0	0.79	0.53	1.00		
8.21	1.13	4.11	113.0	0.83	0.28	1.00		
7.88	1.09	3.94	113.0	0.80	0.28	1.00		
48.18	1.45	3.85	588.7	0.93	0.06	0.16		
48.27	1.45	2.90	600.0	0.92	0.06	0.12		
1.66	0.28	0.24	22.0	0.86	0.34	0.29		
2.06	0.35	1.44	22.0	0.96	0.34	1.40		
1.86	0.32	1.30	22.0	0.96	0.34	1.40		
5.56	0.63	1.68	61.4	0.96	0.23	0.61		
6.20	1.29	1.88	81.6	0.87	0.41	0.61		
25.55	1.60	8.05	334.0	0.87	0.13	0.63		
19.21	0.60	1.58	257.4	0.85	0.06	0.16		
19.77	0.61	1.62	260.4	0.87	0.06	0.16		
21.96	0.68	1.80	293.8	0.85	0.08	0.16		
23.46	0.73	1.92	307.6	0.87	0.06	0.16		
5.11	0.82	2.56	69.0	0.85	0.32	1.00		
5.16	0.83	2.58	69.6	0.85	0.32	1.00		
5.21	0.83	2.61	70.4	0.85	0.32	1.00		
5.25	0.84	2.62	71.0	0.84	0.32	1.00		
0.88	0.20	0.44	11.0	0.91	0.45	1.00		
25.89	0.78	8.48	342.0	0.86	0.06	0.66		
5.39	1.55	1.74	74.0	0.83	0.57	0.65		
30.14	2.71	10.61	402.0	0.86	0.18	0.70		
27.93	0.84	13.97	377.0	0.85	0.06	1.00		
0.79	0.18	1.98	9.4	0.96	0.45	5.00		
1.09	0.25	2.72	13.6	0.91	0.45	5.00		

CAIR-CAMR-CAVR 2020

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Alabama	COLBERT	COLBERT	Coal Steam	47	5	SCR and Scrubber
2020	Alabama	COLBERT	COLBERT	Coal Steam	47	1	SCR
2020	Alabama	COLBERT	COLBERT	Coal Steam	47	2	SCR
2020	Alabama	COLBERT	COLBERT	Coal Steam	47	3	SCR
2020	Alabama	COLBERT	COLBERT	Coal Steam	47	4	SCR
2020	Alabama	GREENE	GREENE COUNTY	Coal Steam	10	2	SCR and Scrubber
2020	Alabama	GREENE	GREENE COUNTY	Coal Steam	10	1	SCR and Scrubber
2020	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	8	Scrubber
2020	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	7	SCR and Scrubber
2020	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	1	SCR
2020	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	2	SCR
2020	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	3	SCR
2020	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	4	SCR
2020	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	5	SCR
2020	Alabama	JACKSON	WIDOWS CREEK	Coal Steam	50	6	SCR
2020	Alabama	JEFFERSON	JAMES H MILLER JR	Coal Steam	6002	1	SCR
2020	Alabama	JEFFERSON	JAMES H MILLER JR	Coal Steam	6002	2	SCR
2020	Alabama	JEFFERSON	JAMES H MILLER JR	Coal Steam	6002	3	SCR
2020	Alabama	JEFFERSON	JAMES H MILLER JR	Coal Steam	6002	4	SCR
2020	Alabama	MOBILE	BARRY	Coal Steam	3	5	SCR and Scrubber
2020	Alabama	MOBILE	BARRY	Coal Steam	3	4	No SCR or Scrubber >25 MW
2020	Alabama	MOBILE	BARRY	Coal Steam	3	1	No SCR or Scrubber >25 MW
2020	Alabama	MOBILE	BARRY	Coal Steam	3	2	No SCR or Scrubber >25 MW
2020	Alabama	MOBILE	BARRY	Coal Steam	3	3	No SCR or Scrubber >25 MW
2020	Alabama	SHELBY	E C GASTON	Coal Steam	26	1	SCR and Scrubber
2020	Alabama	SHELBY	E C GASTON	Coal Steam	26	4	SCR and Scrubber
2020	Alabama	SHELBY	E C GASTON	Coal Steam	26	2	SCR and Scrubber
2020	Alabama	SHELBY	E C GASTON	Coal Steam	26	3	SCR and Scrubber
2020	Alabama	SHELBY	E C GASTON	Coal Steam	26	5	SCR and Scrubber
2020	Alabama	WALKER	GORGAS	Coal Steam	8	10	SCR and Scrubber
2020	Alabama	WALKER	GORGAS	Coal Steam	8	8	SCR and Scrubber
2020	Alabama	WALKER	GORGAS	Coal Steam	8	9	SCR and Scrubber
2020	Alabama	WALKER	GORGAS	Coal Steam	8	6	SCR
2020	Alabama	WALKER	GORGAS	Coal Steam	8	7	SCR
2020	Alabama	WASHINGTON	CHARLES R LOWMAN	Coal Steam	56	3	SCR and Scrubber
2020	Alabama	WASHINGTON	CHARLES R LOWMAN	Coal Steam	56	2	SCR and Scrubber
2020	Alabama	WASHINGTON	CHARLES R LOWMAN	Coal Steam	56	1	No SCR or Scrubber >25 MW
2020	Arkansas	BENTON	FLINT CREEK	Coal Steam	6138	1	Scrubber
2020	Arkansas	INDEPENDENCE	INDEPENDENCE	Coal Steam	6641	1	Scrubber
2020	Arkansas	INDEPENDENCE	INDEPENDENCE	Coal Steam	6641	2	Scrubber
2020	Arkansas	JEFFERSON	WHITE BLUFF	Coal Steam	6009	1	Scrubber
2020	Arkansas	JEFFERSON	WHITE BLUFF	Coal Steam	6009	2	Scrubber
2020	Connecticut	FAIRFIELD	BRIDGEPORT HARBOR	Coal Steam	568	BHB3	Scrubber
2020	Connecticut	NEW LONDON	AES Thames Incorporated	Coal Steam	10675	GEN1	Scrubber
2020	Connecticut		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Connecticut		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Connecticut		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Delaware	NEW CASTLE	EDGE MOOR	Coal Steam	593	3	No SCR or Scrubber >25 MW
2020	Delaware	NEW CASTLE	EDGE MOOR	Coal Steam	593	4	No SCR or Scrubber >25 MW
2020	Delaware	SUSSEX	INDIAN RIVER	Coal Steam	594	4	Scrubber

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
36.78	1.10	4.60	451.3	0.93	0.06	0.25		
14.24	0.43	7.12	178.0	0.91	0.06	1.00		
14.18	0.43	7.09	178.0	0.91	0.06	1.00		
14.21	0.43	7.11	178.0	0.91	0.06	1.00		
14.16	0.42	7.08	178.0	0.91	0.06	1.00		
19.21	0.48	1.10	249.6	0.88	0.05	0.11		
18.90	0.81	1.08	256.5	0.84	0.09	0.11		
35.80	1.07	6.71	467.0	0.88	0.06	0.37	X	
38.08	1.14	10.19	477.0	0.91	0.06	0.54	X	
9.64	0.31	4.82	111.0	0.96	0.06	1.00	X	
9.25	0.17	4.62	111.0	0.95	0.04	1.00	X	
9.66	0.31	4.83	111.0	0.96	0.06	1.00	X	
9.68	0.31	4.84	111.0	0.96	0.06	1.00	X	
9.41	0.31	4.71	111.0	0.96	0.06	1.00	X	
9.10	0.29	4.55	111.0	0.94	0.06	1.00	X	
54.53	4.67	12.84	699.0	0.89	0.17	0.47	X	X
54.50	4.29	12.84	699.0	0.89	0.16	0.47	X	X
53.34	4.25	12.56	701.0	0.87	0.16	0.47	X	X
52.48	4.30	12.36	701.0	0.85	0.16	0.47	X	X
54.32	1.63	6.79	751.9	0.82	0.06	0.25		
26.15	2.58	13.07	362.0	0.82	0.20	1.00		
10.29	1.78	5.15	138.0	0.85	0.35	1.00		
10.47	1.81	5.23	139.0	0.86	0.35	1.00		
18.66	3.22	9.33	251.0	0.85	0.35	1.00		
17.67	0.56	2.61	249.8	0.81	0.06	0.30	X	X
18.74	0.54	2.77	251.7	0.96	0.06	0.30	X	X
18.77	0.59	2.78	254.7	0.84	0.06	0.30	X	X
18.83	0.54	2.79	255.7	0.84	0.06	0.30	X	X
60.34	1.81	7.54	842.9	0.82	0.06	0.25	X	X
51.63	1.55	6.45	707.8	0.83	0.06	0.25	X	X
12.57	0.31	0.72	163.5	0.88	0.05	0.11	X	X
13.71	0.32	0.78	173.3	0.90	0.05	0.11	X	X
9.48	0.31	4.74	110.0	0.96	0.07	1.00	X	X
9.20	0.30	4.60	111.0	0.95	0.07	1.00	X	X
20.37	0.60	4.96	235.0	0.96	0.06	0.49		
20.64	0.63	5.03	237.0	0.96	0.06	0.49		
2.17	0.45	1.08	80.0	0.31	0.41	1.00		
35.88	3.55	2.69	471.7	0.87	0.20	0.15		
66.07	7.33	4.96	818.5	0.92	0.22	0.15		
69.88	9.95	5.24	824.3	0.96	0.28	0.15		
65.41	4.81	4.91	797.9	0.94	0.15	0.15		
66.70	4.43	5.00	826.3	0.92	0.13	0.15		
28.17	2.11	2.11	377.4	0.85	0.15	0.15	X	
15.48	0.46	1.79	195.0	0.91	0.06	0.23		
4.40	0.13	0.55	68.7	0.73	0.06	0.25		
4.40	0.13	0.55	68.7	0.73	0.06	0.25		
5.08	0.15	0.63	79.2	0.73	0.06	0.25		
5.95	0.51	3.27	84.0	0.81	0.17	1.10	X	
12.58	1.07	6.92	167.0	0.86	0.17	1.10	X	
34.09	3.77	2.56	394.8	0.96	0.22	0.15		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Delaware	SUSSEX	INDIAN RIVER	Coal Steam	594	1	No SCR or Scrubber >25 MW
2020	Delaware	SUSSEX	INDIAN RIVER	Coal Steam	594	2	No SCR or Scrubber >25 MW
2020	Delaware	SUSSEX	INDIAN RIVER	Coal Steam	594	3	No SCR or Scrubber >25 MW
2020	District Of Columbia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	District Of Columbia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	District Of Columbia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Florida	ALACHUA	DEERHAVEN	Coal Steam	663	B2	SCR and Scrubber
2020	Florida	BAY	SMITH	Coal Steam	643	1	No SCR or Scrubber >25 MW
2020	Florida	BAY	SMITH	Coal Steam	643	2	No SCR or Scrubber >25 MW
2020	Florida	CITRUS	CRYSTAL RIVER	Coal Steam	628	4	SCR and Scrubber
2020	Florida	CITRUS	CRYSTAL RIVER	Coal Steam	628	5	SCR and Scrubber
2020	Florida	CITRUS	CRYSTAL RIVER	Coal Steam	628	1	No SCR or Scrubber >25 MW
2020	Florida	CITRUS	CRYSTAL RIVER	Coal Steam	628	2	No SCR or Scrubber >25 MW
2020	Florida	DUVAL	Cedar Bay Generating Company L P	Coal Steam	10672	GEN1	Scrubber
2020	Florida	DUVAL	ST JOHNS RIVER POWER	Coal Steam	207	1	SCR and Scrubber
2020	Florida	DUVAL	ST JOHNS RIVER POWER	Coal Steam	207	2	SCR and Scrubber
2020	Florida	ESCAMBIA	CRIST	Coal Steam	641	7	SCR and Scrubber
2020	Florida	ESCAMBIA	CRIST	Coal Steam	641	4	No SCR or Scrubber >25 MW
2020	Florida	ESCAMBIA	CRIST	Coal Steam	641	5	No SCR or Scrubber >25 MW
2020	Florida	ESCAMBIA	CRIST	Coal Steam	641	6	No SCR or Scrubber >25 MW
2020	Florida	HERNANDO	Central Power and Lime Incorporated	Coal Steam	10333	GEN1	Scrubber
2020	Florida	HILLSBOROUGH	BIG BEND	Coal Steam	645	BB01	SCR and Scrubber
2020	Florida	HILLSBOROUGH	BIG BEND	Coal Steam	645	BB02	SCR and Scrubber
2020	Florida	HILLSBOROUGH	BIG BEND	Coal Steam	645	BB03	SCR and Scrubber
2020	Florida	HILLSBOROUGH	BIG BEND	Coal Steam	645	BB04	SCR and Scrubber
2020	Florida	JACKSON	SCHOLZ	Coal Steam	642	1	No SCR or Scrubber >25 MW
2020	Florida	JACKSON	SCHOLZ	Coal Steam	642	2	No SCR or Scrubber >25 MW
2020	Florida	MARTIN	Indiantown Cogeneration Facility	Coal Steam	50976	GEN1	Scrubber
2020	Florida	ORANGE	STANTON ENERGY	Coal Steam	564	2	SCR and Scrubber
2020	Florida	ORANGE	STANTON ENERGY	Coal Steam	564	1	SCR and Scrubber
2020	Florida	POLK	C D MCINTOSH JR	Coal Steam	676	3	SCR and Scrubber
2020	Florida	PUTNAM	SEMINOLE	Coal Steam	136	1	SCR and Scrubber
2020	Florida	PUTNAM	SEMINOLE	Coal Steam	136	2	SCR and Scrubber
2020	Georgia	BARTOW	BOWEN	Coal Steam	703	1BLR	SCR and Scrubber
2020	Georgia	BARTOW	BOWEN	Coal Steam	703	2BLR	SCR and Scrubber
2020	Georgia	BARTOW	BOWEN	Coal Steam	703	3BLR	SCR and Scrubber
2020	Georgia	BARTOW	BOWEN	Coal Steam	703	4BLR	SCR and Scrubber
2020	Georgia	CHATHAM	KRAFT	Coal Steam	733	1	No SCR or Scrubber >25 MW
2020	Georgia	CHATHAM	KRAFT	Coal Steam	733	2	No SCR or Scrubber >25 MW
2020	Georgia	CHATHAM	KRAFT	Coal Steam	733	3	No SCR or Scrubber >25 MW
2020	Georgia	COBB	JACK MCDONOUGH	Coal Steam	710	MB1	SCR and Scrubber
2020	Georgia	COBB	JACK MCDONOUGH	Coal Steam	710	MB2	SCR and Scrubber
2020	Georgia	COWETA	YATES	Coal Steam	728	Y6BR	Scrubber
2020	Georgia	COWETA	YATES	Coal Steam	728	Y7BR	Scrubber
2020	Georgia	COWETA	YATES	Coal Steam	728	Y1BR	Scrubber
2020	Georgia	COWETA	YATES	Coal Steam	728	Y4BR	SCR and Scrubber
2020	Georgia	COWETA	YATES	Coal Steam	728	Y5BR	SCR and Scrubber
2020	Georgia	COWETA	YATES	Coal Steam	728	Y2BR	No SCR or Scrubber >25 MW
2020	Georgia	COWETA	YATES	Coal Steam	728	Y3BR	No SCR or Scrubber >25 MW
2020	Georgia	DOUGHERTY	MITCHELL	Coal Steam	727	3	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
7.08	1.33	3.89	89.0	0.91	0.37	1.10		
7.49	1.27	4.12	89.0	0.96	0.34	1.10		
12.51	1.16	6.88	162.0	0.88	0.18	1.10		
1.18	0.04	0.07	18.5	0.73	0.06	0.11	X	
1.18	0.04	0.07	18.5	0.73	0.06	0.11	X	
1.18	0.04	0.07	18.5	0.73	0.06	0.11	X	
17.70	0.53	1.06	213.4	0.95	0.06	0.12		
12.23	2.15	6.12	162.0	0.86	0.35	1.00		
14.20	2.52	7.10	189.0	0.86	0.35	1.00		
48.96	1.47	6.12	682.4	0.82	0.06	0.25		
48.57	1.46	6.07	682.4	0.81	0.06	0.25		
27.07	3.58	13.54	369.0	0.84	0.26	1.00		
30.48	3.66	15.24	464.0	0.75	0.24	1.00		
19.69	1.23	3.94	248.0	0.91	0.13	0.40		
38.57	1.05	6.75	624.0	0.71	0.05	0.35		
48.68	1.40	8.51	624.0	0.89	0.06	0.35		
37.18	1.12	4.65	467.0	0.91	0.06	0.25		
6.08	0.53	3.04	78.0	0.89	0.17	1.00		
6.32	0.73	3.16	80.0	0.90	0.23	1.00		
20.81	5.05	10.40	302.0	0.79	0.49	1.00		
8.81	1.41	2.97	111.0	0.91	0.32	0.67		
31.35	0.97	3.92	421.0	0.85	0.06	0.25		
30.24	0.94	3.78	421.0	0.82	0.06	0.25		
31.45	0.94	4.88	430.0	0.83	0.06	0.31		
31.76	0.95	4.92	439.0	0.83	0.06	0.31		
4.52	0.62	2.26	49.0	0.96	0.27	1.00		
4.52	0.62	2.26	49.0	0.96	0.27	1.00		
23.34	0.70	3.65	294.0	0.91	0.06	0.31		
37.72	1.13	4.72	441.0	0.96	0.06	0.25		
31.48	0.79	5.51	441.0	0.81	0.05	0.35		
25.19	0.70	4.41	333.0	0.86	0.06	0.35		
44.45	1.52	7.78	625.0	0.81	0.07	0.35		
42.68	1.48	7.47	625.0	0.78	0.07	0.35		
55.60	1.59	4.17	698.0	0.91	0.06	0.15	X	X
55.99	1.75	4.20	702.9	0.91	0.06	0.15	X	X
70.34	2.20	5.28	883.1	0.91	0.06	0.15	X	X
72.44	2.38	5.43	909.5	0.91	0.07	0.15	X	X
1.26	0.15	0.69	48.0	0.30	0.24	1.10		
1.28	0.15	0.70	52.0	0.28	0.24	1.10		
2.31	0.28	1.27	102.0	0.26	0.24	1.10		
18.47	0.34	0.58	252.6	0.83	0.04	0.06	X	X
19.03	0.35	0.60	253.6	0.86	0.04	0.06	X	X
26.13	3.47	0.78	344.6	0.87	0.27	0.06	X	X
26.39	3.38	0.79	347.5	0.87	0.26	0.06	X	X
8.84	1.72	0.33	99.0	0.96	0.39	0.07	X	X
10.38	0.25	0.33	132.2	0.90	0.05	0.06	X	X
10.61	0.26	0.33	134.1	0.90	0.05	0.06	X	X
2.52	0.55	1.38	105.0	0.27	0.44	1.10	X	X
2.78	0.61	1.53	112.0	0.28	0.44	1.10	X	X
3.50	0.46	1.92	153.0	0.26	0.26	1.10		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Georgia	EFFINGHAM	MCINTOSH	Coal Steam	6124	1	No SCR or Scrubber >25 MW
2020	Georgia	EFFINGHAM	Savannah River Mill	Coal Steam	10361	GEN3	No SCR or Scrubber <=25 MW
2020	Georgia	EFFINGHAM	Savannah River Mill	Coal Steam	10361	GEN4	No SCR or Scrubber <=25 MW
2020	Georgia	FLOYD	HAMMOND	Coal Steam	708	1	SCR and Scrubber
2020	Georgia	FLOYD	HAMMOND	Coal Steam	708	2	SCR and Scrubber
2020	Georgia	FLOYD	HAMMOND	Coal Steam	708	3	SCR and Scrubber
2020	Georgia	FLOYD	HAMMOND	Coal Steam	708	4	SCR and Scrubber
2020	Georgia	HEARD	WANSLEY	Coal Steam	6052	1	SCR and Scrubber
2020	Georgia	HEARD	WANSLEY	Coal Steam	6052	2	SCR and Scrubber
2020	Georgia	MONROE	SCHERER	Coal Steam	6257	1	No SCR or Scrubber >25 MW
2020	Georgia	MONROE	SCHERER	Coal Steam	6257	4	No SCR or Scrubber >25 MW
2020	Georgia	MONROE	SCHERER	Coal Steam	6257	2	No SCR or Scrubber >25 MW
2020	Georgia	MONROE	SCHERER	Coal Steam	6257	3	No SCR or Scrubber >25 MW
2020	Georgia	PUTNAM	HARLLEE BRANCH	Coal Steam	709	1	SCR and Scrubber
2020	Georgia	PUTNAM	HARLLEE BRANCH	Coal Steam	709	2	SCR and Scrubber
2020	Georgia	PUTNAM	HARLLEE BRANCH	Coal Steam	709	4	SCR and Scrubber
2020	Georgia	PUTNAM	HARLLEE BRANCH	Coal Steam	709	3	SCR and Scrubber
2020	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Georgia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Illinois	CHRISTIAN	KINCAID	Coal Steam	876	1	SCR
2020	Illinois	CHRISTIAN	KINCAID	Coal Steam	876	2	SCR
2020	Illinois	COOK	CRAWFORD	Coal Steam	867	7	No SCR or Scrubber >25 MW
2020	Illinois	COOK	FISK	Coal Steam	886	19	No SCR or Scrubber >25 MW
2020	Illinois	COOK	CRAWFORD	Coal Steam	867	8	No SCR or Scrubber >25 MW
2020	Illinois	FULTON	DUCK CREEK	Coal Steam	6016	1	SCR and Scrubber
2020	Illinois	JASPER	NEWTON	Coal Steam	6017	1	Scrubber
2020	Illinois	JASPER	NEWTON	Coal Steam	6017	2	No SCR or Scrubber >25 MW
2020	Illinois	LAKE	WAUKEGAN	Coal Steam	883	17	SCR
2020	Illinois	LAKE	WAUKEGAN	Coal Steam	883	8	No SCR or Scrubber >25 MW
2020	Illinois	LAKE	WAUKEGAN	Coal Steam	883	7	No SCR or Scrubber >25 MW
2020	Illinois	MADISON	WOOD RIVER	Coal Steam	898	5	No SCR or Scrubber >25 MW
2020	Illinois	MADISON	WOOD RIVER	Coal Steam	898	4	No SCR or Scrubber >25 MW
2020	Illinois	MASON	HAVANA	Coal Steam	891	9	SCR and Scrubber
2020	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	1	No SCR or Scrubber >25 MW
2020	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	2	No SCR or Scrubber >25 MW
2020	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	3	No SCR or Scrubber >25 MW
2020	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	4	No SCR or Scrubber >25 MW
2020	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	5	No SCR or Scrubber >25 MW
2020	Illinois	MASSAC	JOPPA STEAM	Coal Steam	887	6	No SCR or Scrubber >25 MW
2020	Illinois	MONTGOMERY	COFFEEN	Coal Steam	861	01	SCR and Scrubber
2020	Illinois	MONTGOMERY	COFFEEN	Coal Steam	861	02	SCR and Scrubber
2020	Illinois	MORGAN	MEREDOSIA	Coal Steam	864	05	SCR and Scrubber

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
3.63	0.65	2.00	155.0	0.27	0.36	1.10		
0.03	0.01	0.04	0.5	0.76	0.48	2.20		
0.03	0.01	0.04	0.5	0.76	0.48	2.20		
8.58	0.27	0.27	109.6	0.89	0.06	0.06	X	X
8.63	0.27	0.27	109.6	0.90	0.06	0.06	X	X
8.54	0.26	0.27	109.6	0.89	0.06	0.06	X	X
39.77	1.27	2.98	499.3	0.91	0.06	0.15	X	X
69.48	1.92	5.21	872.3	0.91	0.06	0.15	X	X
69.56	1.89	5.22	873.3	0.91	0.05	0.15	X	X
63.44	9.15	26.26	849.1	0.85	0.29	0.83	X	
64.29	6.22	26.62	849.8	0.86	0.19	0.83	X	
62.98	8.65	26.07	856.1	0.84	0.27	0.83	X	
66.99	5.13	27.73	875.1	0.87	0.15	0.83	X	
19.74	0.70	0.62	260.4	0.87	0.07	0.06	X	X
23.90	0.85	0.75	318.2	0.86	0.07	0.06	X	X
36.17	1.22	1.14	496.4	0.83	0.07	0.06	X	X
36.98	1.25	1.16	498.3	0.85	0.07	0.06	X	X
0.00	0.00	0.00	0.0	0.73	0.06	0.06		
0.00	0.00	0.00	0.0	0.73	0.06	0.06		
0.00	0.00	0.00	0.0	0.73	0.06	0.06		
0.00	0.00	0.00	0.0	0.73	0.06	0.06		
0.00	0.00	0.00	0.0	0.73	0.06	0.06		
1.11	0.03	0.03	17.3	0.73	0.06	0.06		
1.11	0.03	0.03	17.3	0.73	0.06	0.06		
1.11	0.03	0.03	17.3	0.73	0.06	0.06		
1.11	0.03	0.03	17.3	0.73	0.06	0.06		
1.48	0.04	0.04	23.1	0.73	0.06	0.06		
42.10	1.78	10.08	554.0	0.87	0.08	0.48		
40.82	1.73	9.78	554.0	0.84	0.08	0.48		
16.85	1.62	4.39	213.0	0.90	0.19	0.52	X	X
23.62	2.68	5.83	316.0	0.85	0.23	0.49	X	X
24.48	2.47	6.38	319.0	0.88	0.20	0.52	X	X
27.46	0.82	9.61	366.0	0.86	0.06	0.70		
45.01	3.09	2.70	543.4	0.95	0.14	0.12		
42.65	2.39	9.49	555.0	0.88	0.11	0.44		
8.45	0.26	1.90	100.0	0.96	0.06	0.45	X	X
22.58	1.62	5.58	297.0	0.87	0.14	0.49	X	X
25.35	1.75	6.07	328.0	0.88	0.14	0.48	X	X
27.71	2.13	6.36	372.0	0.85	0.15	0.46	X	X
8.20	0.62	1.95	96.0	0.96	0.15	0.48	X	X
33.38	1.00	4.17	419.0	0.91	0.06	0.25		
13.01	0.85	3.35	169.0	0.88	0.13	0.51		
12.93	0.84	3.33	169.0	0.87	0.13	0.51		
13.04	0.88	3.36	169.0	0.88	0.13	0.51		
13.04	0.88	3.36	169.0	0.88	0.13	0.51		
13.07	0.86	3.37	169.0	0.88	0.13	0.51		
12.99	0.85	3.34	169.0	0.88	0.13	0.51		
26.52	0.93	1.59	332.9	0.91	0.07	0.12		
43.55	1.52	2.61	548.2	0.91	0.07	0.12		
17.15	0.51	1.03	210.5	0.93	0.06	0.12		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Illinois	PEORIA	E D EDWARDS	Coal Steam	856	1	SCR and Scrubber
2020	Illinois	PEORIA	E D EDWARDS	Coal Steam	856	2	SCR and Scrubber
2020	Illinois	PEORIA	E D EDWARDS	Coal Steam	856	3	SCR and Scrubber
2020	Illinois	PIKE	PEARL STATION	Coal Steam	6238	1A	No SCR or Scrubber <=25 MW
2020	Illinois	PUTNAM	HENNEPIN	Coal Steam	892	2	Scrubber
2020	Illinois	RANDOLPH	BALDWIN	Coal Steam	889	1	SCR
2020	Illinois	RANDOLPH	BALDWIN	Coal Steam	889	2	SCR
2020	Illinois	RANDOLPH	BALDWIN	Coal Steam	889	3	No SCR or Scrubber >25 MW
2020	Illinois	SANGAMON	DALLMAN	Coal Steam	963	32	SCR and Scrubber
2020	Illinois	SANGAMON	DALLMAN	Coal Steam	963	33	SCR and Scrubber
2020	Illinois	SANGAMON	DALLMAN	Coal Steam	963	31	SCR and Scrubber
2020	Illinois	TAZEWELL	POWERTON	Coal Steam	879	52	SCR
2020	Illinois	TAZEWELL	POWERTON	Coal Steam	879	61	SCR
2020	Illinois	TAZEWELL	POWERTON	Coal Steam	879	62	SCR
2020	Illinois	TAZEWELL	POWERTON	Coal Steam	879	51	SCR
2020	Illinois	WILL	WILL COUNTY	Coal Steam	884	2	SCR
2020	Illinois	WILL	WILL COUNTY	Coal Steam	884	1	SCR
2020	Illinois	WILL	JOLIET 29	Coal Steam	384	72	No SCR or Scrubber >25 MW
2020	Illinois	WILL	JOLIET 29	Coal Steam	384	81	No SCR or Scrubber >25 MW
2020	Illinois	WILL	JOLIET 29	Coal Steam	384	82	No SCR or Scrubber >25 MW
2020	Illinois	WILL	JOLIET 29	Coal Steam	384	71	No SCR or Scrubber >25 MW
2020	Illinois	WILL	JOLIET 9	Coal Steam	874	5	No SCR or Scrubber >25 MW
2020	Illinois	WILL	WILL COUNTY	Coal Steam	884	4	No SCR or Scrubber >25 MW
2020	Illinois	WILL	WILL COUNTY	Coal Steam	884	3	No SCR or Scrubber >25 MW
2020	Illinois	WILLIAMSON	MARION	Coal Steam	976	4	SCR and Scrubber
2020	Illinois		MANO_IL_Coal Steam	Coal Steam	0	041	SCR and Scrubber
2020	Indiana	CASS	LOGANSPORT	Coal Steam	1032	5	No SCR or Scrubber <=25 MW
2020	Indiana	CASS	LOGANSPORT	Coal Steam	1032	6	No SCR or Scrubber <=25 MW
2020	Indiana	DEARBORN	TANNERS CREEK	Coal Steam	988	U4	SCR and Scrubber
2020	Indiana	DEARBORN	TANNERS CREEK	Coal Steam	988	U1	SCR
2020	Indiana	DEARBORN	TANNERS CREEK	Coal Steam	988	U2	SCR
2020	Indiana	DEARBORN	TANNERS CREEK	Coal Steam	988	U3	SCR
2020	Indiana	DUBOIS	JASPER 2	Coal Steam	6225	1	No SCR or Scrubber <=25 MW
2020	Indiana	FLOYD	R GALLAGHER	Coal Steam	1008	4	No SCR or Scrubber >25 MW
2020	Indiana	FLOYD	R GALLAGHER	Coal Steam	1008	1	No SCR or Scrubber >25 MW
2020	Indiana	FLOYD	R GALLAGHER	Coal Steam	1008	2	No SCR or Scrubber >25 MW
2020	Indiana	FLOYD	R GALLAGHER	Coal Steam	1008	3	No SCR or Scrubber >25 MW
2020	Indiana	GIBSON	GIBSON	Coal Steam	6113	1	SCR and Scrubber
2020	Indiana	GIBSON	GIBSON	Coal Steam	6113	2	SCR and Scrubber
2020	Indiana	GIBSON	GIBSON	Coal Steam	6113	3	SCR and Scrubber
2020	Indiana	GIBSON	GIBSON	Coal Steam	6113	5	SCR and Scrubber
2020	Indiana	GIBSON	GIBSON	Coal Steam	6113	4	SCR and Scrubber
2020	Indiana	JASPER	R M SCHAHFER	Coal Steam	6085	17	SCR and Scrubber
2020	Indiana	JASPER	R M SCHAHFER	Coal Steam	6085	18	SCR and Scrubber
2020	Indiana	JASPER	R M SCHAHFER	Coal Steam	6085	14	SCR
2020	Indiana	JASPER	R M SCHAHFER	Coal Steam	6085	15	No SCR or Scrubber >25 MW
2020	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	4	SCR and Scrubber
2020	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	1	SCR and Scrubber
2020	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	3	SCR and Scrubber
2020	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	2	SCR and Scrubber

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
10.63	0.31	0.64	114.5	0.96	0.06	0.12		
22.41	0.68	1.34	256.5	0.96	0.06	0.12		
27.74	0.83	1.66	353.4	0.90	0.06	0.12		
2.10	0.47	4.62	22.0	0.96	0.45	4.40		
17.75	1.15	1.07	210.5	0.96	0.13	0.12		
47.59	1.43	9.52	575.0	0.94	0.06	0.40	X	X
44.99	1.34	10.78	581.0	0.88	0.06	0.48	X	X
46.10	2.70	9.86	595.0	0.88	0.12	0.43	X	X
7.72	0.36	0.87	86.0	0.96	0.09	0.23		
15.54	0.47	1.94	190.0	0.93	0.06	0.25		
7.96	0.37	0.90	88.0	0.96	0.09	0.22		
27.14	0.81	5.88	347.9	0.89	0.06	0.43		
27.20	0.82	5.89	348.6	0.89	0.06	0.43		
27.41	0.82	5.93	351.4	0.89	0.06	0.43		
27.47	0.82	5.95	352.1	0.89	0.06	0.43		
12.66	0.38	2.77	148.0	0.96	0.06	0.44	X	X
12.64	0.38	2.76	151.0	0.96	0.06	0.44	X	X
16.60	0.98	5.63	224.1	0.85	0.12	0.68	X	X
18.85	1.22	6.39	254.4	0.85	0.13	0.68	X	X
19.53	1.26	6.62	263.6	0.85	0.13	0.68	X	X
20.37	1.21	6.90	274.9	0.85	0.12	0.68	X	X
19.80	3.41	6.44	292.0	0.77	0.34	0.65	X	X
38.79	2.95	9.58	510.0	0.87	0.15	0.49	X	X
19.82	1.73	4.80	251.0	0.90	0.17	0.48	X	X
15.83	0.63	3.56	170.0	0.96	0.08	0.45		
32.35	0.97	9.71	500.0	0.74	0.06	0.60		
1.62	0.37	4.05	16.7	0.96	0.45	5.00		
1.78	0.40	4.45	22.3	0.91	0.45	5.00		
37.00	1.11	4.63	489.5	0.86	0.06	0.25	X	X
10.78	0.34	5.39	140.0	0.88	0.06	1.00	X	X
10.67	0.34	5.34	140.0	0.87	0.06	1.00	X	X
14.78	0.47	7.39	200.0	0.84	0.06	1.00	X	X
1.09	0.24	2.72	13.6	0.91	0.45	5.00	X	
10.37	2.05	5.19	140.0	0.85	0.39	1.00	X	
10.98	2.19	5.49	140.0	0.89	0.40	1.00	X	
10.98	2.19	5.49	140.0	0.89	0.40	1.00	X	
10.37	2.05	5.19	140.0	0.85	0.39	1.00	X	
49.13	1.51	6.14	616.8	0.91	0.06	0.25	X	
49.13	1.51	6.14	616.8	0.91	0.06	0.25	X	
49.13	1.41	6.14	616.8	0.91	0.06	0.25	X	
48.27	1.45	8.17	619.0	0.89	0.06	0.34	X	
48.53	1.46	8.49	622.0	0.89	0.06	0.35	X	
30.56	0.99	4.81	361.0	0.96	0.06	0.31		
29.11	0.80	4.59	361.0	0.92	0.06	0.31		
38.24	1.15	12.16	431.0	0.96	0.06	0.64		
39.82	4.66	11.61	472.0	0.96	0.23	0.58		
17.31	0.68	1.04	200.7	0.96	0.08	0.12	X	
17.39	0.66	1.04	201.7	0.96	0.08	0.12	X	
17.48	0.66	1.05	202.7	0.96	0.06	0.12	X	
17.56	0.67	1.05	203.6	0.96	0.08	0.12	X	

CAIR-CAMR-CAVR 2020

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	5	SCR and Scrubber
2020	Indiana	JEFFERSON	CLIFTY CREEK	Coal Steam	983	6	SCR and Scrubber
2020	Indiana	LA PORTE	MICHIGAN CITY	Coal Steam	997	12	SCR
2020	Indiana	LAKE	STATE LINE	Coal Steam	981	4	SCR
2020	Indiana	LAKE	DEAN H MITCHELL	Coal Steam	996	11	No SCR or Scrubber >25 MW
2020	Indiana	LAKE	DEAN H MITCHELL	Coal Steam	996	4	No SCR or Scrubber >25 MW
2020	Indiana	LAKE	DEAN H MITCHELL	Coal Steam	996	5	No SCR or Scrubber >25 MW
2020	Indiana	LAKE	DEAN H MITCHELL	Coal Steam	996	6	No SCR or Scrubber >25 MW
2020	Indiana	LAKE	STATE LINE	Coal Steam	981	3	No SCR or Scrubber >25 MW
2020	Indiana	MARION	ELMER W STOUT	Coal Steam	990	70	SCR and Scrubber
2020	Indiana	MARION	ELMER W STOUT	Coal Steam	990	50	No SCR or Scrubber >25 MW
2020	Indiana	MARION	ELMER W STOUT	Coal Steam	990	60	No SCR or Scrubber >25 MW
2020	Indiana	MARION	PERRY K	Coal Steam	992	11	No SCR or Scrubber <=25 MW
2020	Indiana	MARION	PERRY K	Coal Steam	992	12	No SCR or Scrubber <=25 MW
2020	Indiana	MARION	PERRY K	Coal Steam	992	13	No SCR or Scrubber <=25 MW
2020	Indiana	MARION	PERRY K	Coal Steam	992	14	No SCR or Scrubber <=25 MW
2020	Indiana	MARION	PERRY K	Coal Steam	992	15	No SCR or Scrubber <=25 MW
2020	Indiana	MARION	PERRY K	Coal Steam	992	16	No SCR or Scrubber <=25 MW
2020	Indiana	MIAMI	PERU	Coal Steam	1037	5	No SCR or Scrubber <=25 MW
2020	Indiana	MIAMI	PERU	Coal Steam	1037	2	No SCR or Scrubber <=25 MW
2020	Indiana	MONTGOMERY	CRAWFORDSVILLE	Coal Steam	1024	5	No SCR or Scrubber <=25 MW
2020	Indiana	MONTGOMERY	CRAWFORDSVILLE	Coal Steam	1024	6	No SCR or Scrubber <=25 MW
2020	Indiana	MORGAN	H T PRITCHARD	Coal Steam	991	3	No SCR or Scrubber >25 MW
2020	Indiana	MORGAN	H T PRITCHARD	Coal Steam	991	5	No SCR or Scrubber >25 MW
2020	Indiana	MORGAN	H T PRITCHARD	Coal Steam	991	6	No SCR or Scrubber >25 MW
2020	Indiana	MORGAN	H T PRITCHARD	Coal Steam	991	4	No SCR or Scrubber >25 MW
2020	Indiana	PIKE	FRANK E RATTS	Coal Steam	1043	2SG1	SCR and Scrubber
2020	Indiana	PIKE	FRANK E RATTS	Coal Steam	1043	1SG1	SCR and Scrubber
2020	Indiana	PIKE	PETERSBURG	Coal Steam	994	1	SCR and Scrubber
2020	Indiana	PIKE	PETERSBURG	Coal Steam	994	2	SCR and Scrubber
2020	Indiana	PIKE	PETERSBURG	Coal Steam	994	3	SCR and Scrubber
2020	Indiana	PIKE	PETERSBURG	Coal Steam	994	4	SCR and Scrubber
2020	Indiana	PORTER	BAILLY	Coal Steam	995	7	SCR and Scrubber
2020	Indiana	PORTER	BAILLY	Coal Steam	995	8	SCR and Scrubber
2020	Indiana	POSEY	A B BROWN	Coal Steam	6137	1	SCR and Scrubber
2020	Indiana	POSEY	A B BROWN	Coal Steam	6137	2	SCR and Scrubber
2020	Indiana	SPENCER	ROCKPORT	Coal Steam	6166	MB1	SCR
2020	Indiana	SPENCER	ROCKPORT	Coal Steam	6166	MB2	SCR
2020	Indiana	SULLIVAN	MEROM	Coal Steam	6213	2SG1	SCR and Scrubber
2020	Indiana	SULLIVAN	MEROM	Coal Steam	6213	1SG1	SCR and Scrubber
2020	Indiana	VERMILLION	CAYUGA	Coal Steam	1001	2	SCR and Scrubber
2020	Indiana	VERMILLION	CAYUGA	Coal Steam	1001	1	SCR and Scrubber
2020	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	6	SCR and Scrubber
2020	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	2	No SCR or Scrubber >25 MW
2020	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	4	No SCR or Scrubber >25 MW
2020	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	3	No SCR or Scrubber >25 MW
2020	Indiana	VIGO	WABASH RIVER	Coal Steam	1010	5	No SCR or Scrubber >25 MW
2020	Indiana	WARRICK	F B CULLEY	Coal Steam	1012	2	Scrubber
2020	Indiana	WARRICK	WARRICK	Coal Steam	6705	4	SCR and Scrubber
2020	Indiana	WARRICK	F B CULLEY	Coal Steam	1012	3	SCR and Scrubber

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
18.41	0.72	1.10	213.4	0.96	0.08	0.12	X	
15.70	0.55	0.94	198.7	0.90	0.07	0.12	X	
37.24	1.25	11.99	469.0	0.91	0.07	0.64		
21.55	0.70	5.22	303.0	0.81	0.06	0.48	X	X
7.30	1.51	3.65	110.0	0.76	0.41	1.00	X	X
8.09	0.97	4.05	125.0	0.74	0.24	1.00	X	X
8.00	0.59	4.00	125.0	0.73	0.15	1.00	X	X
8.26	1.09	4.13	125.0	0.75	0.26	1.00	X	X
14.62	1.68	4.34	187.0	0.89	0.23	0.59	X	X
30.77	0.78	1.85	413.1	0.85	0.05	0.12	X	X
7.88	1.40	3.94	106.0	0.85	0.35	1.00	X	X
7.85	1.35	3.93	106.0	0.85	0.34	1.00	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
0.15	0.04	0.17	2.0	0.88	0.57	2.20	X	X
1.04	0.23	2.59	12.3	0.96	0.45	5.00		
1.92	0.43	4.80	20.0	0.96	0.45	5.00		
0.98	0.22	2.46	11.7	0.96	0.45	5.00		
1.00	0.22	2.49	12.5	0.91	0.45	5.00		
2.96	1.13	1.48	43.0	0.78	0.76	1.00	X	X
3.98	0.48	1.99	62.0	0.73	0.24	1.00	X	X
7.18	1.48	3.59	99.0	0.83	0.41	1.00	X	X
3.87	0.56	1.94	56.0	0.79	0.29	1.00	X	X
9.06	0.32	0.54	118.5	0.87	0.07	0.12	X	
9.15	0.32	0.55	119.4	0.87	0.07	0.12	X	
17.62	0.54	3.35	232.0	0.87	0.06	0.38	X	
32.19	0.97	2.58	407.0	0.90	0.06	0.16	X	
39.57	1.50	7.52	510.0	0.89	0.08	0.38	X	
39.65	0.87	7.53	515.0	0.88	0.04	0.38	X	
13.07	0.33	2.03	160.0	0.93	0.05	0.31	X	X
26.28	1.34	4.07	320.0	0.94	0.10	0.31	X	X
19.50	0.55	4.14	250.0	0.89	0.06	0.42		
19.49	0.62	4.14	250.0	0.89	0.06	0.42		
95.02	2.85	30.88	1300.0	0.83	0.06	0.65	X	
94.62	2.84	30.75	1300.0	0.83	0.06	0.65	X	
38.55	1.10	6.75	493.0	0.89	0.06	0.35		
39.21	1.23	6.86	507.0	0.88	0.06	0.35		
36.16	0.94	4.52	479.7	0.86	0.05	0.25		
37.14	0.94	4.64	489.5	0.87	0.05	0.25		
24.53	1.07	3.07	311.3	0.90	0.09	0.25		
5.73	1.38	2.87	85.0	0.77	0.48	1.00		
5.89	1.42	2.95	85.0	0.79	0.48	1.00		
6.19	1.49	3.10	85.0	0.83	0.48	1.00		
6.70	1.61	3.35	95.0	0.81	0.48	1.00		
8.19	1.64	1.02	90.0	0.96	0.40	0.25	X	
10.47	0.37	0.63	132.2	0.90	0.07	0.12	X	
19.50	0.59	2.44	250.0	0.89	0.06	0.25	X	

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Iowa	ALLAMAKEE	LANSING	Coal Steam	1047	4	No SCR or Scrubber >25 MW
2020	Iowa	ALLAMAKEE	LANSING	Coal Steam	1047	2	No SCR or Scrubber <=25 MW
2020	Iowa	ALLAMAKEE	LANSING	Coal Steam	1047	1	No SCR or Scrubber <=25 MW
2020	Iowa	BLACK HAWK	STREETER STATION	Coal Steam	1131	7	No SCR or Scrubber >25 MW
2020	Iowa	CLINTON	MILTON L KAPP	Coal Steam	1048	2	No SCR or Scrubber >25 MW
2020	Iowa	DES MOINES	BURLINGTON	Coal Steam	1104	1	No SCR or Scrubber >25 MW
2020	Iowa	DUBUQUE	DUBUQUE	Coal Steam	1046	5	No SCR or Scrubber >25 MW
2020	Iowa	DUBUQUE	DUBUQUE	Coal Steam	1046	1	No SCR or Scrubber >25 MW
2020	Iowa	LINN	PRAIRIE CREEK	Coal Steam	1073	3	No SCR or Scrubber >25 MW
2020	Iowa	LINN	PRAIRIE CREEK	Coal Steam	1073	4	No SCR or Scrubber >25 MW
2020	Iowa	LINN	PRAIRIE CREEK	Coal Steam	1073	1	No SCR or Scrubber <=25 MW
2020	Iowa	LINN	PRAIRIE CREEK	Coal Steam	1073	2	No SCR or Scrubber <=25 MW
2020	Iowa	LINN	SIXTH STREET	Coal Steam	1058	2	No SCR or Scrubber <=25 MW
2020	Iowa	LINN	SIXTH STREET	Coal Steam	1058	3	No SCR or Scrubber <=25 MW
2020	Iowa	LINN	SIXTH STREET	Coal Steam	1058	4	No SCR or Scrubber <=25 MW
2020	Iowa	LINN	SIXTH STREET	Coal Steam	1058	5	No SCR or Scrubber <=25 MW
2020	Iowa	LOUISA	LOUISA	Coal Steam	6664	101	No SCR or Scrubber >25 MW
2020	Iowa	MARION	PELLA	Coal Steam	1175	6	No SCR or Scrubber <=25 MW
2020	Iowa	MARION	PELLA	Coal Steam	1175	7	No SCR or Scrubber <=25 MW
2020	Iowa	MARSHALL	SUTHERLAND	Coal Steam	1077	1	No SCR or Scrubber >25 MW
2020	Iowa	MARSHALL	SUTHERLAND	Coal Steam	1077	2	No SCR or Scrubber >25 MW
2020	Iowa	MARSHALL	SUTHERLAND	Coal Steam	1077	3	No SCR or Scrubber >25 MW
2020	Iowa	MUSCATINE	MUSCATINE	Coal Steam	1167	9	Scrubber
2020	Iowa	MUSCATINE	MUSCATINE	Coal Steam	1167	8	No SCR or Scrubber >25 MW
2020	Iowa	MUSCATINE	FAIR STATION	Coal Steam	1218	2	No SCR or Scrubber >25 MW
2020	Iowa	MUSCATINE	FAIR STATION	Coal Steam	1218	1	No SCR or Scrubber <=25 MW
2020	Iowa	POTTAWATTAMIE	COUNCIL BLUFFS	Coal Steam	1082	3	No SCR or Scrubber >25 MW
2020	Iowa	POTTAWATTAMIE	COUNCIL BLUFFS	Coal Steam	1082	1	No SCR or Scrubber >25 MW
2020	Iowa	POTTAWATTAMIE	COUNCIL BLUFFS	Coal Steam	1082	2	No SCR or Scrubber >25 MW
2020	Iowa	SCOTT	RIVERSIDE	Coal Steam	1081	9	No SCR or Scrubber >25 MW
2020	Iowa	SCOTT	RIVERSIDE	Coal Steam	1081	6	No SCR or Scrubber <=25 MW
2020	Iowa	SCOTT	RIVERSIDE	Coal Steam	1081	7	No SCR or Scrubber <=25 MW
2020	Iowa	SCOTT	RIVERSIDE	Coal Steam	1081	8	No SCR or Scrubber <=25 MW
2020	Iowa	STORY	AMES	Coal Steam	1122	7	No SCR or Scrubber >25 MW
2020	Iowa	STORY	AMES	Coal Steam	1122	8	No SCR or Scrubber >25 MW
2020	Iowa	WAPELLO	OTTUMWA	Coal Steam	6254	1	No SCR or Scrubber >25 MW
2020	Iowa	WOODBURY	GEORGE NEAL NORTH	Coal Steam	1091	1	SCR
2020	Iowa	WOODBURY	GEORGE NEAL NORTH	Coal Steam	1091	2	No SCR or Scrubber >25 MW
2020	Iowa	WOODBURY	GEORGE NEAL NORTH	Coal Steam	1091	3	No SCR or Scrubber >25 MW
2020	Iowa	WOODBURY	GEORGE NEAL SOUTH	Coal Steam	7343	4	No SCR or Scrubber >25 MW
2020	Iowa		MAPP_IA_Coal Steam	Coal Steam	0	044	SCR and Scrubber
2020	Kentucky	BELL	PINEVILLE	Coal Steam	1360	3	No SCR or Scrubber >25 MW
2020	Kentucky	BOONE	EAST BEND	Coal Steam	6018	2	SCR and Scrubber
2020	Kentucky	CARROLL	GHENT	Coal Steam	1356	1	SCR and Scrubber
2020	Kentucky	CARROLL	GHENT	Coal Steam	1356	4	SCR and Scrubber
2020	Kentucky	CARROLL	GHENT	Coal Steam	1356	3	SCR and Scrubber
2020	Kentucky	CARROLL	GHENT	Coal Steam	1356	2	No SCR or Scrubber >25 MW
2020	Kentucky	CLARK	DALE	Coal Steam	1385	3	No SCR or Scrubber >25 MW
2020	Kentucky	CLARK	DALE	Coal Steam	1385	4	No SCR or Scrubber >25 MW
2020	Kentucky	CLARK	DALE	Coal Steam	1385	1	No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
20.41	2.01	6.11	260.0	0.90	0.20	0.60		
1.03	0.29	0.51	11.0	0.96	0.57	1.00		
1.63	0.46	0.82	16.0	0.96	0.57	1.00		
2.68	0.50	1.34	37.0	0.83	0.37	1.00		
18.14	1.09	5.51	217.0	0.95	0.12	0.61		
16.42	1.31	5.98	211.0	0.89	0.16	0.73		
2.35	0.30	0.84	30.0	0.89	0.26	0.72		
3.24	0.38	1.16	35.0	0.96	0.24	0.72		
3.84	0.43	1.38	49.0	0.89	0.22	0.72		
12.00	2.23	4.17	142.0	0.96	0.37	0.70		
0.80	0.18	2.01	9.5	0.96	0.45	5.00		
1.01	0.23	2.52	9.5	0.96	0.45	5.00		
2.05	0.42	5.13	19.0	0.96	0.41	5.00		
2.05	0.54	5.13	19.0	0.96	0.53	5.00		
1.60	0.33	4.01	19.0	0.96	0.41	5.00		
2.05	0.43	5.13	19.0	0.96	0.42	5.00		
46.75	5.26	13.46	644.0	0.83	0.22	0.58		
1.70	0.32	1.19	15.7	0.96	0.37	1.40		
2.19	0.41	1.53	20.3	0.96	0.37	1.40		
2.77	0.31	0.72	31.0	0.96	0.22	0.52		
2.86	0.31	0.74	31.0	0.96	0.22	0.52		
6.24	1.79	1.84	80.0	0.89	0.58	0.59		
13.79	0.94	0.64	161.0	0.96	0.14	0.09		
5.70	1.40	2.17	76.0	0.86	0.49	0.76		
2.77	0.45	1.38	41.0	0.77	0.32	1.00		
2.07	0.47	5.17	23.0	0.96	0.45	5.00		
48.69	6.33	15.02	637.0	0.87	0.26	0.62		
4.08	0.44	1.26	43.0	0.96	0.22	0.62		
6.70	0.48	2.07	88.0	0.87	0.14	0.62		
10.38	1.37	3.15	130.0	0.91	0.26	0.61		
0.12	0.04	0.31	1.5	0.96	0.57	5.00		
0.15	0.04	0.37	1.8	0.96	0.57	5.00		
0.15	0.04	0.37	1.8	0.96	0.57	5.00		
2.23	0.16	0.45	30.0	0.85	0.14	0.40		
4.84	0.53	0.97	65.0	0.85	0.22	0.40		
54.74	5.46	16.39	714.0	0.88	0.20	0.60		
10.26	0.31	3.74	135.0	0.87	0.06	0.73		
22.76	3.11	7.92	300.1	0.87	0.27	0.70		
28.94	6.12	10.07	370.9	0.89	0.42	0.70		
45.14	4.67	15.84	624.0	0.83	0.21	0.70		
51.11	1.53	6.75	790.0	0.74	0.06	0.26		
2.14	0.48	1.07	32.0	0.76	0.45	1.00		
46.79	1.40	2.34	600.0	0.89	0.06	0.10	X	X
36.89	1.11	9.22	476.0	0.88	0.06	0.50		
39.81	1.19	4.98	474.8	0.96	0.06	0.25		
40.83	1.22	5.10	487.5	0.96	0.06	0.25		
39.71	4.77	15.17	509.0	0.89	0.24	0.76		
4.19	0.81	2.31	66.0	0.73	0.38	1.10		
4.78	0.92	2.63	75.0	0.73	0.38	1.10		
1.76	0.50	1.94	20.0	0.96	0.57	2.20		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Kentucky	CLARK	DALE	Coal Steam	1385	2	No SCR or Scrubber <=25 MW
2020	Kentucky	DAVIESS	ELMER SMITH	Coal Steam	1374	1	SCR and Scrubber
2020	Kentucky	DAVIESS	ELMER SMITH	Coal Steam	1374	2	SCR and Scrubber
2020	Kentucky	HANCOCK	COLEMAN	Coal Steam	1381	C1	SCR and Scrubber
2020	Kentucky	HANCOCK	COLEMAN	Coal Steam	1381	C2	SCR and Scrubber
2020	Kentucky	HANCOCK	COLEMAN	Coal Steam	1381	C3	SCR and Scrubber
2020	Kentucky	HENDERSON	HMP&L STATION 2	Coal Steam	1382	H1	SCR and Scrubber
2020	Kentucky	HENDERSON	HMP&L STATION 2	Coal Steam	1382	H2	SCR and Scrubber
2020	Kentucky	HENDERSON	HENDERSON I	Coal Steam	1372	6	No SCR or Scrubber >25 MW
2020	Kentucky	HENDERSON	HENDERSON I	Coal Steam	1372	5	No SCR or Scrubber <=25 MW
2020	Kentucky	JEFFERSON	MILL CREEK	Coal Steam	1364	3	SCR and Scrubber
2020	Kentucky	JEFFERSON	MILL CREEK	Coal Steam	1364	4	SCR and Scrubber
2020	Kentucky	JEFFERSON	CANE RUN	Coal Steam	1363	4	SCR and Scrubber
2020	Kentucky	JEFFERSON	CANE RUN	Coal Steam	1363	5	SCR and Scrubber
2020	Kentucky	JEFFERSON	CANE RUN	Coal Steam	1363	6	SCR and Scrubber
2020	Kentucky	JEFFERSON	MILL CREEK	Coal Steam	1364	2	SCR and Scrubber
2020	Kentucky	JEFFERSON	MILL CREEK	Coal Steam	1364	1	SCR and Scrubber
2020	Kentucky	LAWRENCE	BIG SANDY	Coal Steam	1353	BSU1	SCR and Scrubber
2020	Kentucky	LAWRENCE	BIG SANDY	Coal Steam	1353	BSU2	SCR and Scrubber
2020	Kentucky	MASON	H L SPURLOCK	Coal Steam	6041	1	SCR and Scrubber
2020	Kentucky	MASON	H L SPURLOCK	Coal Steam	6041	2	SCR and Scrubber
2020	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	10	No SCR or Scrubber >25 MW
2020	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	1	No SCR or Scrubber >25 MW
2020	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	2	No SCR or Scrubber >25 MW
2020	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	3	No SCR or Scrubber >25 MW
2020	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	4	No SCR or Scrubber >25 MW
2020	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	5	No SCR or Scrubber >25 MW
2020	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	6	No SCR or Scrubber >25 MW
2020	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	7	No SCR or Scrubber >25 MW
2020	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	8	No SCR or Scrubber >25 MW
2020	Kentucky	MCCRACKEN	SHAWNEE	Coal Steam	1379	9	No SCR or Scrubber >25 MW
2020	Kentucky	MERCER	E W BROWN	Coal Steam	1355	2	SCR and Scrubber
2020	Kentucky	MERCER	E W BROWN	Coal Steam	1355	3	SCR and Scrubber
2020	Kentucky	MERCER	E W BROWN	Coal Steam	1355	1	No SCR or Scrubber >25 MW
2020	Kentucky	MUHLENBERG	PARADISE	Coal Steam	1378	1	Scrubber
2020	Kentucky	MUHLENBERG	PARADISE	Coal Steam	1378	2	Scrubber
2020	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	2	Scrubber
2020	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	3	Scrubber
2020	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	1	Scrubber
2020	Kentucky	MUHLENBERG	PARADISE	Coal Steam	1378	3	SCR and Scrubber
2020	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	4	No SCR or Scrubber >25 MW
2020	Kentucky	MUHLENBERG	GREEN RIVER	Coal Steam	1357	5	No SCR or Scrubber >25 MW
2020	Kentucky	OHIO	D B WILSON	Coal Steam	6823	W1	SCR and Scrubber
2020	Kentucky	PULASKI	COOPER	Coal Steam	1384	2	SCR and Scrubber
2020	Kentucky	PULASKI	COOPER	Coal Steam	1384	1	No SCR or Scrubber >25 MW
2020	Kentucky	TRIMBLE	TRIMBLE COUNTY	Coal Steam	6071	1	SCR and Scrubber
2020	Kentucky	WEBSTER	R D GREEN	Coal Steam	6639	G2	SCR and Scrubber
2020	Kentucky	WEBSTER	R D GREEN	Coal Steam	6639	G1	SCR and Scrubber
2020	Kentucky	WEBSTER	ROBERT REID	Coal Steam	1383	R1	No SCR or Scrubber >25 MW
2020	Kentucky	WOODFORD	TYRONE	Coal Steam	1361	5	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
1.75	0.50	1.93	20.0	0.96	0.57	2.20		
11.26	0.43	1.13	141.0	0.91	0.08	0.20		
18.81	0.55	2.30	249.4	0.86	0.06	0.25		
11.06	0.38	0.66	145.5	0.87	0.07	0.12		
11.06	0.37	0.66	145.5	0.87	0.07	0.12		
11.43	0.34	0.69	150.4	0.87	0.06	0.12		
11.28	0.50	3.20	151.5	0.85	0.09	0.57		
11.73	0.50	1.44	157.5	0.85	0.08	0.25		
0.52	0.14	0.57	26.0	0.23	0.53	2.20		
0.84	0.19	2.11	10.0	0.96	0.45	5.00		
30.12	0.98	8.55	386.1	0.89	0.06	0.57	X	
37.44	1.08	10.62	480.1	0.89	0.06	0.57	X	
13.08	0.46	2.19	155.0	0.96	0.07	0.33	X	
14.36	0.50	2.40	168.0	0.96	0.07	0.33	X	
19.06	0.45	3.19	240.0	0.91	0.05	0.33	X	
24.05	0.72	6.01	301.0	0.91	0.06	0.50	X	
23.80	0.56	2.91	303.1	0.90	0.05	0.25	X	
18.63	0.56	0.59	254.5	0.84	0.06	0.06	X	X
63.83	1.92	4.79	783.2	0.93	0.06	0.15	X	X
23.39	0.70	0.72	293.7	0.91	0.06	0.06		
38.97	1.17	4.87	489.5	0.91	0.06	0.25		
11.43	2.10	3.43	124.0	0.96	0.37	0.60		
10.33	1.99	3.47	134.0	0.88	0.38	0.67		
10.28	1.98	3.45	134.0	0.88	0.38	0.67		
10.28	1.98	3.45	134.0	0.88	0.38	0.67		
10.28	1.98	3.46	134.0	0.88	0.38	0.67		
10.29	1.98	3.46	134.0	0.88	0.38	0.67		
10.09	1.85	3.39	134.0	0.86	0.37	0.67		
10.28	1.89	3.45	134.0	0.88	0.37	0.67		
10.31	1.89	3.46	134.0	0.88	0.37	0.67		
10.33	1.90	3.47	134.0	0.88	0.37	0.67		
12.47	0.35	0.75	164.5	0.87	0.06	0.12		
29.45	0.82	1.77	376.0	0.89	0.06	0.12		
7.10	1.65	3.55	105.0	0.77	0.47	1.00		
48.05	1.97	7.82	602.0	0.91	0.08	0.33		
47.81	1.94	7.94	625.0	0.87	0.08	0.33		
1.39	0.47	0.51	17.5	0.91	0.68	0.72		
1.65	0.56	0.60	17.5	0.96	0.68	0.72		
1.24	0.42	0.45	18.0	0.79	0.67	0.72		
75.13	2.78	22.54	963.0	0.89	0.07	0.60		
4.77	0.76	2.38	71.0	0.77	0.32	1.00		
6.85	1.34	3.43	108.0	0.72	0.39	1.00		
32.45	1.28	9.21	416.2	0.89	0.08	0.57		
17.95	0.54	0.56	220.3	0.93	0.06	0.06		
8.00	1.75	4.40	116.0	0.79	0.44	1.10		
34.84	1.05	2.61	435.0	0.91	0.06	0.15		
16.46	0.45	2.02	221.1	0.85	0.05	0.25		
17.05	0.58	2.09	229.0	0.85	0.07	0.25		
2.60	0.69	2.87	64.0	0.46	0.53	2.20		
4.57	0.74	2.51	72.0	0.72	0.32	1.10		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Kentucky		ECAO_KY_Coal Steam	Coal Steam	0	013	SCR and Scrubber
2020	Louisiana	CALCASIEU	Nelson Coal	Coal Steam	1393	6	Scrubber
2020	Louisiana	DE SOTO	DOLET HILLS	Coal Steam	51	1	Scrubber
2020	Louisiana	POINTE COUPEE	BIG CAJUN 2	Coal Steam	6055	2B3	No SCR or Scrubber >25 MW
2020	Louisiana	POINTE COUPEE	BIG CAJUN 2	Coal Steam	6055	2B2	No SCR or Scrubber >25 MW
2020	Louisiana	POINTE COUPEE	BIG CAJUN 2	Coal Steam	6055	2B1	No SCR or Scrubber >25 MW
2020	Louisiana	RAPIDES	RODEMACHER	Coal Steam	6190	2	SCR and Scrubber
2020	Maryland	ALLEGANY	AES Warrior Run Cogeneration Facility	Coal Steam	10678	GEN1	Scrubber
2020	Maryland	ANNE ARUNDEL	HERBERT A WAGNER	Coal Steam	1554	2	SCR and Scrubber
2020	Maryland	ANNE ARUNDEL	HERBERT A WAGNER	Coal Steam	1554	3	SCR and Scrubber
2020	Maryland	ANNE ARUNDEL	BRANDON SHORES	Coal Steam	602	1	SCR and Scrubber
2020	Maryland	ANNE ARUNDEL	BRANDON SHORES	Coal Steam	602	2	SCR and Scrubber
2020	Maryland	BALTIMORE	C P CRANE	Coal Steam	1552	1	SCR and Scrubber
2020	Maryland	BALTIMORE	C P CRANE	Coal Steam	1552	2	SCR and Scrubber
2020	Maryland	CHARLES	MORGANTOWN	Coal Steam	1573	1	SCR and Scrubber
2020	Maryland	CHARLES	MORGANTOWN	Coal Steam	1573	2	SCR and Scrubber
2020	Maryland	MONTGOMERY	DICKERSON	Coal Steam	1572	1	SCR and Scrubber
2020	Maryland	MONTGOMERY	DICKERSON	Coal Steam	1572	3	SCR and Scrubber
2020	Maryland	MONTGOMERY	DICKERSON	Coal Steam	1572	2	SCR and Scrubber
2020	Maryland	PRINCE GEORGE'S	CHALK POINT	Coal Steam	1571	1	SCR and Scrubber
2020	Maryland	PRINCE GEORGE'S	CHALK POINT	Coal Steam	1571	2	SCR and Scrubber
2020	Maryland		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Maryland		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Maryland		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Massachusetts	BRISTOL	SOMERSET	Coal Steam	1613	8	Scrubber
2020	Massachusetts	BRISTOL	BRAYTON POINT	Coal Steam	1619	2	SCR and Scrubber
2020	Massachusetts	BRISTOL	BRAYTON POINT	Coal Steam	1619	1	SCR and Scrubber
2020	Massachusetts	BRISTOL	BRAYTON POINT	Coal Steam	1619	3	SCR and Scrubber
2020	Massachusetts	ESSEX	SALEM HARBOR	Coal Steam	1626	3	Scrubber
2020	Massachusetts	ESSEX	SALEM HARBOR	Coal Steam	1626	2	No SCR or Scrubber >25 MW
2020	Massachusetts	ESSEX	SALEM HARBOR	Coal Steam	1626	1	No SCR or Scrubber >25 MW
2020	Massachusetts	HAMPDEN	MOUNT TOM	Coal Steam	1606	1	Scrubber
2020	MASSACHUSETTS		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	MASSACHUSETTS		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	MASSACHUSETTS		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Michigan	BAY	DAN E KARN	Coal Steam	1702	2	SCR
2020	Michigan	BAY	J C WEADOCK	Coal Steam	1720	7	No SCR or Scrubber >25 MW
2020	Michigan	BAY	J C WEADOCK	Coal Steam	1720	8	No SCR or Scrubber >25 MW
2020	Michigan	BAY	DAN E KARN	Coal Steam	1702	1	No SCR or Scrubber >25 MW
2020	Michigan	DELTA	ESCANABA	Coal Steam	1771	1	No SCR or Scrubber <=25 MW
2020	Michigan	DELTA	ESCANABA	Coal Steam	1771	2	No SCR or Scrubber <=25 MW
2020	Michigan	EATON	ERICKSON	Coal Steam	1832	1	No SCR or Scrubber >25 MW
2020	Michigan	GRAND TRAVERSE	BAYSIDE	Coal Steam	1859	1	No SCR or Scrubber <=25 MW
2020	Michigan	GRAND TRAVERSE	BAYSIDE	Coal Steam	1859	2	No SCR or Scrubber <=25 MW
2020	Michigan	GRAND TRAVERSE	BAYSIDE	Coal Steam	1859	4	No SCR or Scrubber <=25 MW
2020	Michigan	HILLSDALE	ENDICOTT	Coal Steam	4259	1	Scrubber
2020	Michigan	HURON	HARBOR BEACH	Coal Steam	1731	1	No SCR or Scrubber >25 MW
2020	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	2	No SCR or Scrubber >25 MW
2020	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	1	No SCR or Scrubber >25 MW
2020	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	3	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
17.34	0.10	4.92	268.1	0.74	0.01	0.57		
40.94	3.85	3.07	538.5	0.87	0.19	0.15		
52.10	7.61	5.74	650.0	0.92	0.29	0.22		
44.33	3.41	16.69	575.0	0.88	0.15	0.75		
45.55	5.38	17.35	575.0	0.90	0.24	0.76		
47.03	5.55	17.92	580.0	0.93	0.24	0.76		
41.98	1.26	1.26	512.0	0.94	0.06	0.06		
16.19	1.01	0.71	199.7	0.93	0.13	0.09		
10.95	0.33	0.66	132.2	0.95	0.06	0.12	X	
25.85	0.78	1.55	317.2	0.93	0.06	0.12	X	
50.66	1.52	3.80	631.5	0.92	0.06	0.15	X	
48.98	1.47	3.67	632.4	0.88	0.06	0.15	X	
14.25	0.67	0.85	186.0	0.87	0.09	0.12	X	
13.86	0.55	0.83	186.0	0.85	0.08	0.12	X	
40.50	1.23	3.04	569.8	0.81	0.06	0.15	X	
39.83	1.18	2.99	569.8	0.80	0.06	0.15	X	
13.29	0.37	0.80	178.2	0.85	0.06	0.12	X	
12.81	0.36	0.77	178.2	0.82	0.06	0.12	X	
14.45	0.43	0.87	178.2	0.93	0.06	0.12	X	
25.10	0.78	1.51	333.8	0.86	0.06	0.12	X	
25.18	0.78	1.51	334.8	0.86	0.06	0.12	X	
14.96	0.45	0.82	233.4	0.73	0.06	0.11		
14.96	0.45	0.82	233.4	0.73	0.06	0.11		
14.96	0.45	0.82	233.4	0.73	0.06	0.11		
9.04	0.92	2.66	109.9	0.94	0.20	0.59		
18.24	1.25	0.92	223.8	0.93	0.14	0.10		
18.78	1.30	0.94	230.4	0.93	0.14	0.10		
46.52	4.49	2.34	570.8	0.93	0.19	0.10		
11.56	1.16	3.40	140.5	0.94	0.20	0.59		
5.66	0.54	3.11	76.0	0.85	0.19	1.10		
6.12	0.60	3.36	78.0	0.89	0.20	1.10		
11.15	1.94	0.67	142.9	0.89	0.35	0.12		
8.65	0.26	1.08	135.0	0.73	0.06	0.25		
8.65	0.26	1.08	135.0	0.73	0.06	0.25		
9.98	0.30	1.25	155.7	0.73	0.06	0.25		
21.86	0.66	10.93	260.0	0.96	0.06	1.00		
13.52	0.99	6.23	155.0	0.96	0.15	0.92		
13.33	0.98	6.15	155.0	0.96	0.15	0.92		
20.55	1.50	9.47	255.0	0.92	0.15	0.92		
1.09	0.25	0.55	13.0	0.96	0.45	1.00		
1.10	0.25	0.55	13.0	0.96	0.45	1.00		
10.43	2.13	4.07	156.0	0.76	0.41	0.78		
0.36	0.08	0.18	4.2	0.96	0.45	1.00		
0.36	0.08	0.18	4.2	0.96	0.45	1.00		
1.22	0.28	0.61	15.3	0.91	0.45	1.00		
4.89	0.64	0.30	50.0	0.96	0.26	0.12		
6.96	1.32	3.48	103.0	0.77	0.38	1.00		
3.15	0.21	0.92	42.5	0.85	0.13	0.59		
2.86	0.43	0.84	45.0	0.72	0.30	0.59		
3.38	0.20	0.99	45.5	0.85	0.12	0.59		

CAIR-CAMR-CAVR 2020

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	4	No SCR or Scrubber >25 MW
2020	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	6	No SCR or Scrubber >25 MW
2020	Michigan	INGHAM	ECKERT STATION	Coal Steam	1831	5	No SCR or Scrubber >25 MW
2020	Michigan	MANISTEE	TES Filer City Station	Coal Steam	50835	GEN1	Scrubber
2020	Michigan	MARQUETTE	SHIRAS	Coal Steam	1843	3	Scrubber
2020	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	5	No SCR or Scrubber >25 MW
2020	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	6	No SCR or Scrubber >25 MW
2020	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	7	No SCR or Scrubber >25 MW
2020	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	8	No SCR or Scrubber >25 MW
2020	Michigan	MARQUETTE	PRESQUE ISLE	Coal Steam	1769	9	No SCR or Scrubber >25 MW
2020	Michigan	MARQUETTE	SHIRAS	Coal Steam	1843	2	No SCR or Scrubber <=25 MW
2020	Michigan	MONROE	MONROE	Coal Steam	1733	1	SCR
2020	Michigan	MONROE	MONROE	Coal Steam	1733	2	SCR
2020	Michigan	MONROE	MONROE	Coal Steam	1733	3	SCR
2020	Michigan	MONROE	MONROE	Coal Steam	1733	4	SCR
2020	Michigan	MONROE	J R WHITING	Coal Steam	1723	1	No SCR or Scrubber >25 MW
2020	Michigan	MONROE	J R WHITING	Coal Steam	1723	2	No SCR or Scrubber >25 MW
2020	Michigan	MONROE	J R WHITING	Coal Steam	1723	3	No SCR or Scrubber >25 MW
2020	Michigan	MUSKEGON	B C COBB	Coal Steam	1695	5	No SCR or Scrubber >25 MW
2020	Michigan	MUSKEGON	B C COBB	Coal Steam	1695	4	No SCR or Scrubber >25 MW
2020	Michigan	OTTAWA	J B SIMS	Coal Steam	1825	3	Scrubber
2020	Michigan	OTTAWA	J H CAMPBELL	Coal Steam	1710	1	No SCR or Scrubber >25 MW
2020	Michigan	OTTAWA	J H CAMPBELL	Coal Steam	1710	2	No SCR or Scrubber >25 MW
2020	Michigan	OTTAWA	J H CAMPBELL	Coal Steam	1710	3	No SCR or Scrubber >25 MW
2020	Michigan	OTTAWA	JAMES DE YOUNG	Coal Steam	1830	5	No SCR or Scrubber >25 MW
2020	Michigan	OTTAWA	JAMES DE YOUNG	Coal Steam	1830	3	No SCR or Scrubber <=25 MW
2020	Michigan	OTTAWA	JAMES DE YOUNG	Coal Steam	1830	4	No SCR or Scrubber <=25 MW
2020	Michigan	ST. CLAIR	MARYSVILLE	Coal Steam	1732	10	No SCR or Scrubber >25 MW
2020	Michigan	ST. CLAIR	MARYSVILLE	Coal Steam	1732	11	No SCR or Scrubber >25 MW
2020	Michigan	ST. CLAIR	MARYSVILLE	Coal Steam	1732	12	No SCR or Scrubber >25 MW
2020	Michigan	ST. CLAIR	MARYSVILLE	Coal Steam	1732	9	No SCR or Scrubber >25 MW
2020	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	2	No SCR or Scrubber >25 MW
2020	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	4	No SCR or Scrubber >25 MW
2020	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	1	No SCR or Scrubber >25 MW
2020	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	3	No SCR or Scrubber >25 MW
2020	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	6	No SCR or Scrubber >25 MW
2020	Michigan	ST. CLAIR	ST CLAIR	Coal Steam	1743	7	No SCR or Scrubber >25 MW
2020	Michigan	ST. CLAIR	BELLE RIVER	Coal Steam	6034	1	No SCR or Scrubber >25 MW
2020	Michigan	ST. CLAIR	BELLE RIVER	Coal Steam	6034	2	No SCR or Scrubber >25 MW
2020	Michigan	WAYNE	WYANDOTTE	Coal Steam	1866	8	Scrubber
2020	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	16	No SCR or Scrubber >25 MW
2020	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	17	No SCR or Scrubber >25 MW
2020	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	18	No SCR or Scrubber >25 MW
2020	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	19	No SCR or Scrubber >25 MW
2020	Michigan	WAYNE	CONNERS CREEK	Coal Steam	1726	15	No SCR or Scrubber >25 MW
2020	Michigan	WAYNE	CONNERS CREEK	Coal Steam	1726	16	No SCR or Scrubber >25 MW
2020	Michigan	WAYNE	RIVER ROUGE	Coal Steam	1740	2	No SCR or Scrubber >25 MW
2020	Michigan	WAYNE	RIVER ROUGE	Coal Steam	1740	3	No SCR or Scrubber >25 MW
2020	Michigan	WAYNE	TRENTON CHANNEL	Coal Steam	1745	9A	No SCR or Scrubber >25 MW
2020	Michigan	WAYNE	WYANDOTTE	Coal Steam	1866	7	No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
5.38	0.90	1.58	76.4	0.80	0.33	0.59		
5.49	0.75	1.61	76.6	0.82	0.27	0.59		
6.01	0.62	1.83	77.0	0.89	0.21	0.61		
4.37	0.98	0.33	55.0	0.91	0.45	0.15		
3.89	0.24	0.58	44.0	0.96	0.13	0.30		
5.89	1.87	2.94	87.0	0.77	0.63	1.00		
5.96	1.14	2.98	90.0	0.76	0.38	1.00		
6.95	1.70	1.88	85.0	0.93	0.49	0.54		
6.91	1.68	1.87	85.0	0.93	0.49	0.54		
7.12	1.75	1.92	88.0	0.92	0.49	0.54		
2.22	0.50	1.11	21.0	0.96	0.45	1.00		
53.55	1.77	26.77	750.0	0.82	0.07	1.00	X	X
53.24	1.76	26.62	750.0	0.81	0.07	1.00	X	X
52.92	1.43	26.46	750.0	0.81	0.05	1.00	X	X
59.20	1.60	29.60	750.0	0.90	0.05	1.00	X	X
7.83	1.00	3.92	95.0	0.94	0.25	1.00	X	X
7.50	1.08	3.75	95.0	0.90	0.29	1.00	X	X
11.12	1.44	5.13	120.0	0.96	0.26	0.92	X	X
14.52	1.27	6.69	159.0	0.96	0.17	0.92		
14.49	1.03	6.68	161.0	0.96	0.14	0.92		
5.63	1.02	0.44	65.0	0.96	0.36	0.16		
22.03	2.98	10.16	254.0	0.96	0.27	0.92		
26.57	6.95	12.25	355.0	0.85	0.52	0.92		
61.42	11.15	28.31	790.1	0.89	0.36	0.92		
1.76	0.36	0.88	27.0	0.74	0.41	1.00		
0.92	0.21	0.46	10.5	0.96	0.45	1.00		
1.80	0.41	0.90	20.7	0.96	0.45	1.00		
3.92	0.47	1.96	50.0	0.89	0.24	1.00	X	X
3.92	0.47	1.96	50.0	0.89	0.24	1.00	X	X
3.92	0.47	1.96	50.0	0.89	0.24	1.00	X	X
3.92	0.47	1.96	50.0	0.89	0.24	1.00	X	X
12.61	1.60	5.81	162.0	0.89	0.25	0.92	X	X
12.03	1.42	5.55	162.0	0.85	0.24	0.92	X	X
11.97	1.41	5.52	163.0	0.84	0.24	0.92	X	X
11.96	1.38	5.51	163.0	0.84	0.23	0.92	X	X
21.55	1.61	10.78	294.0	0.84	0.15	1.00	X	X
32.97	3.07	16.48	435.0	0.87	0.19	1.00	X	X
47.84	5.44	13.54	625.1	0.87	0.23	0.57	X	X
48.74	3.83	13.79	634.9	0.88	0.16	0.57	X	X
1.69	0.16	0.26	20.0	0.96	0.19	0.31	X	X
1.86	0.22	0.93	26.2	0.81	0.24	1.00	X	X
2.05	0.25	1.03	26.2	0.89	0.24	1.00	X	X
1.86	0.22	0.93	26.2	0.81	0.24	1.00	X	X
1.86	0.22	0.93	26.2	0.81	0.24	1.00	X	X
9.91	0.37	4.96	118.0	0.96	0.07	1.00	X	X
9.91	0.35	4.96	118.0	0.96	0.07	1.00	X	X
17.93	2.64	8.97	238.0	0.86	0.29	1.00	X	X
19.09	3.43	9.54	262.0	0.83	0.36	1.00	X	X
35.32	2.94	17.66	515.0	0.78	0.17	1.00	X	X
1.69	0.32	0.84	20.0	0.96	0.38	1.00	X	X

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Michigan		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Michigan		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Michigan		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Minnesota	BROWN	Springfield	Coal Steam	2012	4	No SCR or Scrubber <=25 MW
2020	Minnesota	CHIPPEWA	MINNESOTA VALLEY	Coal Steam	1918	4	No SCR or Scrubber >25 MW
2020	Minnesota	DAKOTA	BLACK DOG	Coal Steam	1904	3	No SCR or Scrubber >25 MW
2020	Minnesota	DAKOTA	BLACK DOG	Coal Steam	1904	4	No SCR or Scrubber >25 MW
2020	Minnesota	HENNEPIN	RIVERSIDE	Coal Steam	1927	6	No SCR or Scrubber >25 MW
2020	Minnesota	ITASCA	CLAY BOSWELL	Coal Steam	1893	3	Scrubber
2020	Minnesota	ITASCA	CLAY BOSWELL	Coal Steam	1893	1	No SCR or Scrubber >25 MW
2020	Minnesota	ITASCA	CLAY BOSWELL	Coal Steam	1893	2	No SCR or Scrubber >25 MW
2020	Minnesota	ITASCA	CLAY BOSWELL	Coal Steam	1893	4	No SCR or Scrubber >25 MW
2020	Minnesota	KANDIYOHI	WILLMAR	Coal Steam	2022	1	No SCR or Scrubber <=25 MW
2020	Minnesota	KANDIYOHI	WILLMAR	Coal Steam	2022	2	No SCR or Scrubber <=25 MW
2020	Minnesota	KANDIYOHI	WILLMAR	Coal Steam	2022	3	No SCR or Scrubber <=25 MW
2020	Minnesota	LAKE	Silver Bay Power Company	Coal Steam	10849	GEN1	No SCR or Scrubber <=25 MW
2020	Minnesota	LAKE	Silver Bay Power Company	Coal Steam	10849	GEN2	No SCR or Scrubber <=25 MW
2020	Minnesota	MOWER	NORTHEAST STATION	Coal Steam	1961	NEPP	No SCR or Scrubber >25 MW
2020	Minnesota	OLMSTED	SILVER LAKE	Coal Steam	2008	4	No SCR or Scrubber >25 MW
2020	Minnesota	OLMSTED	SILVER LAKE	Coal Steam	2008	1	No SCR or Scrubber <=25 MW
2020	Minnesota	OLMSTED	SILVER LAKE	Coal Steam	2008	2	No SCR or Scrubber <=25 MW
2020	Minnesota	OLMSTED	SILVER LAKE	Coal Steam	2008	3	No SCR or Scrubber <=25 MW
2020	Minnesota	OTTER TAIL	HOOT LAKE	Coal Steam	1943	2	No SCR or Scrubber >25 MW
2020	Minnesota	OTTER TAIL	HOOT LAKE	Coal Steam	1943	3	No SCR or Scrubber >25 MW
2020	Minnesota	OTTER TAIL	HOOT LAKE	Coal Steam	1943	1	No SCR or Scrubber >25 MW
2020	Minnesota	SHERBURNE	SHERBURNE COUNTY	Coal Steam	6090	3	Scrubber
2020	Minnesota	SHERBURNE	SHERBURNE COUNTY	Coal Steam	6090	2	Scrubber
2020	Minnesota	SHERBURNE	SHERBURNE COUNTY	Coal Steam	6090	1	Scrubber
2020	Minnesota	ST. LOUIS	SYL LASKIN	Coal Steam	1891	1	Scrubber
2020	Minnesota	ST. LOUIS	SYL LASKIN	Coal Steam	1891	2	Scrubber
2020	Minnesota	ST. LOUIS	M L HIBBARD	Coal Steam	1897	3	No SCR or Scrubber >25 MW
2020	Minnesota	ST. LOUIS	M L HIBBARD	Coal Steam	1897	4	No SCR or Scrubber <=25 MW
2020	Minnesota	ST. LOUIS	VIRGINIA	Coal Steam	2018	7	No SCR or Scrubber <=25 MW
2020	Minnesota	ST. LOUIS	VIRGINIA	Coal Steam	2018	9	No SCR or Scrubber <=25 MW
2020	Minnesota	ST. LOUIS	HIBBING	Coal Steam	1979	1	No SCR or Scrubber <=25 MW
2020	Minnesota	ST. LOUIS	HIBBING	Coal Steam	1979	2	No SCR or Scrubber <=25 MW
2020	Minnesota	ST. LOUIS	HIBBING	Coal Steam	1979	3	No SCR or Scrubber <=25 MW
2020	Minnesota	WASHINGTON	ALLEN S KING	Coal Steam	1915	1	SCR and Scrubber
2020	Mississippi	CHOCTAW	Red Hills Generating Facility	Coal Steam	55076	350	SCR and Scrubber
2020	Mississippi	HARRISON	JACK WATSON	Coal Steam	2049	4	SCR and Scrubber
2020	Mississippi	HARRISON	JACK WATSON	Coal Steam	2049	5	SCR and Scrubber
2020	Mississippi	JACKSON	VICTOR J DANIEL JR.	Coal Steam	6073	1	SCR and Scrubber
2020	Mississippi	JACKSON	VICTOR J DANIEL JR.	Coal Steam	6073	2	SCR and Scrubber
2020	Mississippi	LAMAR	R D MORROW	Coal Steam	6061	1	SCR and Scrubber
2020	Mississippi	LAMAR	R D MORROW	Coal Steam	6061	2	SCR and Scrubber
2020	Missouri	BOONE	COLUMBIA	Coal Steam	2123	6	No SCR or Scrubber >25 MW
2020	Missouri	BOONE	COLUMBIA	Coal Steam	2123	7	No SCR or Scrubber >25 MW
2020	Missouri	BOONE	COLUMBIA	Coal Steam	2123	8	No SCR or Scrubber <=25 MW
2020	Missouri	BUCHANAN	LAKE ROAD	Coal Steam	2098	5	No SCR or Scrubber <=25 MW
2020	Missouri	CLAY	MISSOURI CITY	Coal Steam	2171	1	No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
2.38	0.07	0.08	37.2	0.73	0.06	0.07		
2.38	0.07	0.08	37.2	0.73	0.06	0.07		
117.59	3.53	2.94	1835.3	0.73	0.06	0.05		
0.40	0.09	0.20	4.0	0.96	0.45	1.00		
3.61	0.52	1.80	46.0	0.89	0.29	1.00		
9.54	1.10	1.91	112.0	0.96	0.23	0.40		
13.56	1.57	2.71	173.0	0.89	0.23	0.40		
6.34	0.72	1.27	75.0	0.96	0.23	0.40		
25.21	1.85	12.61	350.0	0.82	0.15	1.00		
5.17	0.69	2.59	69.0	0.86	0.27	1.00		
5.14	0.69	2.57	69.0	0.85	0.27	1.00		
43.19	4.86	8.64	535.0	0.92	0.23	0.40		
0.32	0.07	0.33	4.0	0.91	0.45	2.10		
0.35	0.03	0.37	4.0	0.96	0.19	2.10		
1.27	0.29	1.33	16.0	0.91	0.45	2.10		
0.03	0.01	0.03	0.3	0.91	0.44	2.10		
0.05	0.01	0.05	0.7	0.91	0.44	2.10		
2.01	0.32	1.01	29.0	0.79	0.32	1.00		
4.46	0.71	2.23	60.0	0.85	0.32	1.00		
0.81	0.18	0.85	9.1	0.96	0.45	2.10		
1.23	0.28	1.29	13.9	0.96	0.45	2.10		
2.04	0.46	2.15	23.0	0.96	0.45	2.10		
4.92	0.36	1.39	64.6	0.87	0.15	0.56		
6.39	0.66	1.80	84.4	0.86	0.21	0.56		
0.68	0.15	0.71	8.0	0.96	0.45	2.10		
64.49	7.48	8.71	871.0	0.85	0.23	0.27		
54.03	6.81	7.56	709.0	0.87	0.25	0.28		
54.32	4.51	7.60	712.0	0.87	0.17	0.28		
4.76	1.18	0.95	55.0	0.96	0.50	0.40		
4.75	1.18	0.95	55.0	0.96	0.50	0.40		
2.45	0.33	1.22	37.0	0.76	0.27	1.00		
1.51	0.20	1.59	14.0	0.96	0.27	2.10		
0.56	0.13	0.58	7.0	0.91	0.45	2.10		
0.56	0.13	0.58	7.0	0.91	0.45	2.10		
0.79	0.18	0.83	10.0	0.91	0.45	2.10		
0.79	0.18	0.83	10.0	0.91	0.45	2.10		
0.74	0.17	0.77	10.0	0.84	0.45	2.10		
37.75	1.34	3.93	571.0	0.75	0.07	0.21		
28.47	0.85	3.76	440.0	0.74	0.06	0.26		
19.46	0.58	2.33	257.5	0.86	0.06	0.24		
37.77	1.32	4.53	488.5	0.88	0.07	0.24		
38.62	1.04	4.63	511.0	0.86	0.05	0.24		
38.35	1.10	4.60	513.0	0.85	0.06	0.24		
16.59	0.50	4.98	200.0	0.95	0.06	0.60		
16.59	0.50	4.98	200.0	0.95	0.06	0.60		
1.18	0.31	2.96	14.0	0.96	0.52	5.00		
4.03	1.05	2.02	57.0	0.81	0.52	1.00		
0.18	0.03	0.45	2.0	0.96	0.29	5.00		
2.19	0.62	1.53	21.0	0.96	0.57	1.40		
1.79	0.40	4.48	19.0	0.96	0.45	5.00		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Missouri	CLAY	MISSOURI CITY	Coal Steam	2171	2	No SCR or Scrubber <=25 MW
2020	Missouri	FRANKLIN	LABADIE	Coal Steam	2103	1	No SCR or Scrubber >25 MW
2020	Missouri	FRANKLIN	LABADIE	Coal Steam	2103	2	No SCR or Scrubber >25 MW
2020	Missouri	FRANKLIN	LABADIE	Coal Steam	2103	3	No SCR or Scrubber >25 MW
2020	Missouri	FRANKLIN	LABADIE	Coal Steam	2103	4	No SCR or Scrubber >25 MW
2020	Missouri	GREENE	SOUTHWEST	Coal Steam	6195	1	Scrubber
2020	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	3	No SCR or Scrubber >25 MW
2020	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	4	No SCR or Scrubber >25 MW
2020	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	5	No SCR or Scrubber >25 MW
2020	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	1	No SCR or Scrubber <=25 MW
2020	Missouri	GREENE	JAMES RIVER	Coal Steam	2161	2	No SCR or Scrubber <=25 MW
2020	Missouri	HENRY	MONTROSE	Coal Steam	2080	2	No SCR or Scrubber >25 MW
2020	Missouri	HENRY	MONTROSE	Coal Steam	2080	1	No SCR or Scrubber >25 MW
2020	Missouri	HENRY	MONTROSE	Coal Steam	2080	3	No SCR or Scrubber >25 MW
2020	Missouri	JACKSON	HAWTHORN	Coal Steam	2079	5	SCR and Scrubber
2020	Missouri	JACKSON	SIBLEY	Coal Steam	2094	3	SCR
2020	Missouri	JACKSON	BLUE VALLEY	Coal Steam	2132	3	No SCR or Scrubber >25 MW
2020	Missouri	JACKSON	SIBLEY	Coal Steam	2094	2	No SCR or Scrubber >25 MW
2020	Missouri	JACKSON	SIBLEY	Coal Steam	2094	1	No SCR or Scrubber >25 MW
2020	Missouri	JACKSON	BLUE VALLEY	Coal Steam	2132	1	No SCR or Scrubber <=25 MW
2020	Missouri	JACKSON	BLUE VALLEY	Coal Steam	2132	2	No SCR or Scrubber <=25 MW
2020	Missouri	JASPER	ASBURY	Coal Steam	2076	1	SCR
2020	Missouri	JEFFERSON	RUSH ISLAND	Coal Steam	6155	1	No SCR or Scrubber >25 MW
2020	Missouri	JEFFERSON	RUSH ISLAND	Coal Steam	6155	2	No SCR or Scrubber >25 MW
2020	Missouri	LIVINGSTON	Chillicothe	Coal Steam	2122	4A	No SCR or Scrubber <=25 MW
2020	Missouri	LIVINGSTON	CHILLICOTHE	Coal Steam	2122	5	No SCR or Scrubber <=25 MW
2020	Missouri	LIVINGSTON	CHILLICOTHE	Coal Steam	2122	6	No SCR or Scrubber <=25 MW
2020	Missouri	NEW MADRID	NEW MADRID	Coal Steam	2167	1	SCR
2020	Missouri	NEW MADRID	NEW MADRID	Coal Steam	2167	2	SCR
2020	Missouri	OSAGE	CHAMOIS	Coal Steam	2169	2	No SCR or Scrubber >25 MW
2020	Missouri	OSAGE	CHAMOIS	Coal Steam	2169	1	No SCR or Scrubber <=25 MW
2020	Missouri	PLATTE	IATAN	Coal Steam	6065	1	No SCR or Scrubber >25 MW
2020	Missouri	RANDOLPH	THOMAS HILL	Coal Steam	2168	MB1	SCR
2020	Missouri	RANDOLPH	THOMAS HILL	Coal Steam	2168	MB2	SCR
2020	Missouri	RANDOLPH	THOMAS HILL	Coal Steam	2168	MB3	No SCR or Scrubber >25 MW
2020	Missouri	SALINE	MARSHALL	Coal Steam	2144	4	No SCR or Scrubber <=25 MW
2020	Missouri	SCOTT	SIKESTON	Coal Steam	6768	1	Scrubber
2020	Missouri	ST. CHARLES	SIOUX	Coal Steam	2107	1	SCR and Scrubber
2020	Missouri	ST. CHARLES	SIOUX	Coal Steam	2107	2	SCR and Scrubber
2020	Missouri	ST. LOUIS	MERAMEC	Coal Steam	2104	1	No SCR or Scrubber >25 MW
2020	Missouri	ST. LOUIS	MERAMEC	Coal Steam	2104	2	No SCR or Scrubber >25 MW
2020	Missouri	ST. LOUIS	MERAMEC	Coal Steam	2104	3	No SCR or Scrubber >25 MW
2020	Missouri	ST. LOUIS	MERAMEC	Coal Steam	2104	4	No SCR or Scrubber >25 MW
2020	New Jersey	CAPE MAY	B L ENGLAND	Coal Steam	2378	2	Scrubber
2020	New Jersey	CAPE MAY	B L ENGLAND	Coal Steam	2378	1	No SCR or Scrubber >25 MW
2020	New Jersey	CUMBERLAND	HOWARD DOWN	Coal Steam	2434	10	No SCR or Scrubber <=25 MW
2020	New Jersey	GLOUCESTER	Logan Generating Plant	Coal Steam	10043	GEN1	SCR and Scrubber
2020	New Jersey	HUDSON	HUDSON	Coal Steam	2403	2	SCR and Scrubber
2020	New Jersey	MERCER	MERCER	Coal Steam	2408	1	SCR and Scrubber
2020	New Jersey	MERCER	MERCER	Coal Steam	2408	2	SCR and Scrubber

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
1.79	0.40	4.48	19.0	0.96	0.45	5.00		
44.91	2.54	15.67	574.0	0.89	0.11	0.70	X	X
43.74	2.51	15.26	574.0	0.87	0.11	0.70	X	X
44.70	2.41	15.60	576.0	0.89	0.11	0.70	X	X
44.92	2.44	15.68	576.0	0.89	0.11	0.70	X	X
13.89	2.31	0.83	178.0	0.89	0.33	0.12		
3.69	1.07	0.88	41.0	0.96	0.58	0.48		
4.53	1.24	1.09	55.0	0.94	0.55	0.48		
7.87	1.77	1.89	97.0	0.93	0.45	0.48		
1.99	0.42	1.39	21.0	0.96	0.42	1.40		
1.99	0.42	1.39	21.0	0.96	0.42	1.40		
11.02	1.94	5.51	153.0	0.82	0.35	1.00		
11.30	1.58	5.65	155.0	0.83	0.28	1.00		
11.30	1.99	5.65	161.0	0.80	0.35	1.00		
42.26	1.27	1.77	550.0	0.88	0.06	0.08		
28.78	0.98	10.19	390.0	0.84	0.07	0.71		
3.78	0.62	1.89	51.0	0.85	0.33	1.00		
3.91	1.32	1.37	53.0	0.84	0.68	0.70		
3.79	1.28	1.33	53.0	0.82	0.68	0.70		
1.77	0.38	0.89	21.0	0.96	0.42	1.00		
2.25	0.48	1.13	21.0	0.96	0.42	1.00		
17.56	0.68	4.60	211.0	0.95	0.08	0.52		
46.58	2.42	15.54	579.0	0.92	0.10	0.67	X	X
44.64	2.48	14.76	579.0	0.88	0.11	0.66	X	X
0.22	0.05	0.55	2.6	0.96	0.45	5.00		
0.42	0.09	1.05	5.2	0.92	0.45	5.00		
0.50	0.11	1.26	6.2	0.92	0.44	5.00		
44.09	2.81	9.04	580.0	0.87	0.13	0.41		
43.51	2.62	8.92	580.0	0.86	0.12	0.41		
3.84	0.94	0.96	49.0	0.89	0.49	0.50		
1.44	0.32	1.01	17.0	0.96	0.45	1.40		
49.18	8.19	15.25	670.0	0.84	0.33	0.62		
13.33	0.40	2.73	175.0	0.87	0.06	0.41		
21.13	0.63	4.32	275.0	0.88	0.06	0.41		
50.11	6.44	10.52	670.0	0.85	0.26	0.42		
0.54	0.12	1.35	5.0	0.96	0.45	5.00		
17.23	1.89	1.03	222.0	0.89	0.22	0.12		
32.91	1.01	4.11	466.0	0.81	0.06	0.25	X	X
31.95	0.94	3.99	466.0	0.78	0.06	0.25	X	X
11.44	0.84	2.67	132.0	0.96	0.15	0.47	X	X
10.81	0.80	2.53	132.0	0.94	0.15	0.47	X	X
22.48	2.61	7.97	277.0	0.93	0.23	0.71	X	X
27.72	2.56	9.83	336.0	0.94	0.18	0.71	X	X
12.91	2.15	2.26	155.0	0.95	0.33	0.35		
9.46	1.73	5.20	129.0	0.84	0.37	1.10		
1.79	0.33	1.35	23.0	0.89	0.37	1.50		
15.88	0.64	1.22	200.0	0.91	0.08	0.15	X	
47.90	1.48	10.96	600.0	0.91	0.06	0.46		
25.53	0.93	1.91	314.6	0.93	0.07	0.15	X	
25.53	1.12	1.91	314.6	0.93	0.09	0.15	X	

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	New Jersey	SALEM	Chambers Cogeneration Limited Partnership	Coal Steam	10566	GEN1	Scrubber
2020	New Jersey	SALEM	DEEPWATER	Coal Steam	2384	8	No SCR or Scrubber >25 MW
2020	New York	BROOME	GOUDEY	Coal Steam	2526	13	No SCR or Scrubber >25 MW
2020	New York	BROOME	GOUDEY	Coal Steam	2526	11	No SCR or Scrubber <=25 MW
2020	New York	BROOME	GOUDEY	Coal Steam	2526	12	No SCR or Scrubber <=25 MW
2020	New York	CHAUTAUQUA	DUNKIRK	Coal Steam	2554	4	SCR and Scrubber
2020	New York	CHAUTAUQUA	DUNKIRK	Coal Steam	2554	3	SCR and Scrubber
2020	New York	CHAUTAUQUA	DUNKIRK	Coal Steam	2554	1	No SCR or Scrubber >25 MW
2020	New York	CHAUTAUQUA	DUNKIRK	Coal Steam	2554	2	No SCR or Scrubber >25 MW
2020	New York	CHAUTAUQUA	S A CARLSON	Coal Steam	2682	10	No SCR or Scrubber <=25 MW
2020	New York	CHAUTAUQUA	S A CARLSON	Coal Steam	2682	11	No SCR or Scrubber <=25 MW
2020	New York	CHAUTAUQUA	S A CARLSON	Coal Steam	2682	12	No SCR or Scrubber <=25 MW
2020	New York	CHAUTAUQUA	S A CARLSON	Coal Steam	2682	9	No SCR or Scrubber <=25 MW
2020	New York	ERIE	C R HUNTLEY	Coal Steam	2549	67	SCR and Scrubber
2020	New York	ERIE	C R HUNTLEY	Coal Steam	2549	68	SCR and Scrubber
2020	New York	ERIE	C R HUNTLEY	Coal Steam	2549	64	No SCR or Scrubber >25 MW
2020	New York	JEFFERSON	Fort Drum H T W Cogeneration Facility	Coal Steam	10464	GEN1	Scrubber
2020	New York	MONROE	ROCHESTER 7	Coal Steam	2642	2	No SCR or Scrubber >25 MW
2020	New York	MONROE	ROCHESTER 7	Coal Steam	2642	3	No SCR or Scrubber >25 MW
2020	New York	MONROE	ROCHESTER 7	Coal Steam	2642	4	No SCR or Scrubber >25 MW
2020	New York	NIAGARA	UDG Niagara Falls Cogeneration Facility	Coal Steam	50202	GEN1	Scrubber
2020	New York	NIAGARA	KINTIGH	Coal Steam	6082	1	SCR and Scrubber
2020	New York	ONONDAGA	Fibertek Energy LLC	Coal Steam	50651	GEN1	No SCR or Scrubber >25 MW
2020	New York	ORANGE	DANSKAMMER	Coal Steam	2480	3	SCR and Scrubber
2020	New York	ORANGE	DANSKAMMER	Coal Steam	2480	4	SCR and Scrubber
2020	New York	ROCKLAND	LOVETT	Coal Steam	2629	4	SCR and Scrubber
2020	New York	ROCKLAND	LOVETT	Coal Steam	2629	5	SCR and Scrubber
2020	New York	TOMPKINS	MILLIKEN	Coal Steam	2535	2	Scrubber
2020	New York	TOMPKINS	MILLIKEN	Coal Steam	2535	1	SCR and Scrubber
2020	North Carolina	BLADEN	Cogentrix Elizabethtown	Coal Steam	10380	GEN1	No SCR or Scrubber >25 MW
2020	North Carolina	BRUNSWICK	Cogentrix Southport	Coal Steam	10378	GEN1	No SCR or Scrubber >25 MW
2020	North Carolina	BRUNSWICK	Cogentrix Southport	Coal Steam	10378	GEN2	No SCR or Scrubber >25 MW
2020	North Carolina	BUNCOMBE	ASHEVILLE	Coal Steam	2706	1	Scrubber
2020	North Carolina	BUNCOMBE	ASHEVILLE	Coal Steam	2706	2	SCR and Scrubber
2020	North Carolina	CABARRUS	Kannapolis Energy Partners	Coal Steam	10626	GEN2	No SCR or Scrubber <=25 MW
2020	North Carolina	CABARRUS	Kannapolis Energy Partners	Coal Steam	10626	GEN3	No SCR or Scrubber <=25 MW
2020	North Carolina	CATAWBA	MARSHALL	Coal Steam	2727	1	SCR and Scrubber
2020	North Carolina	CATAWBA	MARSHALL	Coal Steam	2727	2	SCR and Scrubber
2020	North Carolina	CATAWBA	MARSHALL	Coal Steam	2727	4	SCR and Scrubber
2020	North Carolina	CATAWBA	MARSHALL	Coal Steam	2727	3	SCR and Scrubber
2020	North Carolina	CHATHAM	CAPE FEAR	Coal Steam	2708	5	Scrubber
2020	North Carolina	CHATHAM	CAPE FEAR	Coal Steam	2708	6	Scrubber
2020	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	5	SCR and Scrubber
2020	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	1	No SCR or Scrubber >25 MW
2020	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	2	No SCR or Scrubber >25 MW
2020	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	3	No SCR or Scrubber >25 MW
2020	North Carolina	CLEVELAND	CLIFFSIDE	Coal Steam	2721	4	No SCR or Scrubber >25 MW
2020	North Carolina	DUPLIN	Cogentrix Kenansville	Coal Steam	10381	GEN1	No SCR or Scrubber >25 MW
2020	North Carolina	EDGECOMBE	Dwayne Collier Battle Cogeneration Facil	Coal Steam	10384	GEN1	Scrubber
2020	North Carolina	EDGECOMBE	Dwayne Collier Battle Cogeneration Facil	Coal Steam	10384	GEN2	Scrubber

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
14.84	0.45	2.60	187.0	0.91	0.06	0.35		
6.76	1.34	5.07	80.0	0.96	0.40	1.50		
6.51	0.78	3.58	83.0	0.89	0.24	1.10		
1.75	0.43	1.92	22.0	0.91	0.49	2.20		
1.75	0.43	1.92	22.0	0.91	0.49	2.20		
14.71	0.44	0.82	199.7	0.84	0.06	0.11		
15.17	0.46	0.85	203.6	0.85	0.06	0.11		
7.13	1.17	3.92	91.0	0.89	0.33	1.10		
7.11	1.17	3.91	92.0	0.88	0.33	1.10		
0.99	0.22	1.09	12.5	0.91	0.44	2.20		
0.99	0.22	1.09	12.5	0.91	0.44	2.20		
0.99	0.21	1.09	12.5	0.91	0.41	2.20		
0.99	0.21	1.09	12.5	0.91	0.41	2.20		
14.39	0.43	0.79	187.0	0.88	0.06	0.11		
14.40	0.43	0.80	191.9	0.86	0.06	0.11		
6.55	1.39	3.60	92.0	0.81	0.42	1.10		
3.43	0.46	0.19	44.0	0.89	0.27	0.11		
5.06	0.71	2.78	65.0	0.89	0.28	1.10		
5.09	0.54	2.80	65.0	0.89	0.21	1.10		
5.88	0.62	3.23	80.0	0.84	0.21	1.10		
4.00	0.25	0.44	50.0	0.91	0.13	0.22		
47.38	1.42	5.21	675.0	0.80	0.06	0.22		
5.89	1.03	3.24	80.0	0.84	0.35	1.10		
9.40	0.27	0.41	128.4	0.84	0.06	0.09	X	
17.35	0.53	0.76	227.9	0.87	0.06	0.09	X	
13.61	0.41	0.60	173.3	0.90	0.06	0.09	X	
15.78	0.47	0.69	192.9	0.93	0.06	0.09	X	
10.65	1.32	0.88	149.0	0.82	0.25	0.16		
11.23	0.34	0.93	157.0	0.82	0.06	0.17		
1.75	0.63	1.92	22.0	0.91	0.72	2.20		
2.71	0.61	1.49	45.5	0.68	0.45	1.10		
2.71	0.61	1.49	45.5	0.68	0.45	1.10		
18.61	2.97	0.58	193.9	0.96	0.32	0.06		
18.25	0.54	0.62	189.9	0.96	0.06	0.07		
0.50	0.11	0.55	6.3	0.91	0.45	2.20		
1.01	0.23	1.11	12.7	0.91	0.45	2.20		
30.72	1.18	1.35	376.9	0.93	0.08	0.09	X	
30.72	0.80	1.35	376.9	0.93	0.05	0.09	X	
51.47	6.24	3.86	646.1	0.91	0.24	0.15	X	
52.66	1.39	2.31	646.1	0.93	0.05	0.09	X	
12.07	1.19	0.37	140.0	0.96	0.20	0.06		
14.60	1.87	0.45	169.4	0.96	0.26	0.06		
43.83	0.77	4.60	550.2	0.91	0.03	0.21		
3.06	0.13	0.40	38.0	0.92	0.09	0.26		
3.06	0.09	0.40	38.0	0.92	0.06	0.26		
4.91	0.23	0.64	61.0	0.92	0.10	0.26		
4.91	0.25	0.64	61.0	0.92	0.10	0.26		
1.67	0.38	1.83	21.0	0.91	0.45	2.20		
4.29	0.97	0.16	54.0	0.91	0.45	0.07		
4.29	0.97	0.16	54.0	0.91	0.45	0.07		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	North Carolina	FORSYTH	Tobaccoville Utility Plant	Coal Steam	50221	GEN1	No SCR or Scrubber >25 MW
2020	North Carolina	FORSYTH	Tobaccoville Utility Plant	Coal Steam	50221	GEN2	No SCR or Scrubber >25 MW
2020	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	1	SCR and Scrubber
2020	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	2	SCR and Scrubber
2020	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	4	SCR and Scrubber
2020	North Carolina	GASTON	RIVERBEND	Coal Steam	2732	10	SCR and Scrubber
2020	North Carolina	GASTON	RIVERBEND	Coal Steam	2732	9	SCR and Scrubber
2020	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	3	SCR and Scrubber
2020	North Carolina	GASTON	G G ALLEN	Coal Steam	2718	5	SCR and Scrubber
2020	North Carolina	GASTON	RIVERBEND	Coal Steam	2732	7	No SCR or Scrubber >25 MW
2020	North Carolina	GASTON	RIVERBEND	Coal Steam	2732	8	No SCR or Scrubber >25 MW
2020	North Carolina	HALIFAX	Westmoreland LG&E Partners Roanoke Valle	Coal Steam	54755	GEN2	Scrubber
2020	North Carolina	HALIFAX	Westmoreland LG&E Partners Roanoke Valle	Coal Steam	54035	GEN1	Scrubber
2020	North Carolina	NEW HANOVER	L V SUTTON	Coal Steam	2713	3	SCR and Scrubber
2020	North Carolina	NEW HANOVER	L V SUTTON	Coal Steam	2713	2	SCR
2020	North Carolina	NEW HANOVER	L V SUTTON	Coal Steam	2713	1	No SCR or Scrubber >25 MW
2020	North Carolina	PERSON	ROXBORO	Coal Steam	2712	2	SCR and Scrubber
2020	North Carolina	PERSON	ROXBORO	Coal Steam	2712	3A	SCR and Scrubber
2020	North Carolina	PERSON	ROXBORO	Coal Steam	2712	3B	SCR and Scrubber
2020	North Carolina	PERSON	ROXBORO	Coal Steam	2712	1	SCR and Scrubber
2020	North Carolina	PERSON	MAYO	Coal Steam	6250	1A	SCR and Scrubber
2020	North Carolina	PERSON	MAYO	Coal Steam	6250	1B	SCR and Scrubber
2020	North Carolina	PERSON	ROXBORO	Coal Steam	2712	4A	SCR and Scrubber
2020	North Carolina	PERSON	ROXBORO	Coal Steam	2712	4B	SCR and Scrubber
2020	North Carolina	PERSON	Cogentrix Roxboro	Coal Steam	10379	GEN1	No SCR or Scrubber >25 MW
2020	North Carolina	ROBESON	W H WEATHERSPOON	Coal Steam	2716	1	No SCR or Scrubber >25 MW
2020	North Carolina	ROBESON	W H WEATHERSPOON	Coal Steam	2716	2	No SCR or Scrubber >25 MW
2020	North Carolina	ROBESON	W H WEATHERSPOON	Coal Steam	2716	3	No SCR or Scrubber >25 MW
2020	North Carolina	ROBESON	Cogentrix Lumberton	Coal Steam	10382	GEN1	No SCR or Scrubber >25 MW
2020	North Carolina	ROCKINGHAM	DAN RIVER	Coal Steam	2723	3	SCR and Scrubber
2020	North Carolina	ROCKINGHAM	DAN RIVER	Coal Steam	2723	1	No SCR or Scrubber >25 MW
2020	North Carolina	ROCKINGHAM	DAN RIVER	Coal Steam	2723	2	No SCR or Scrubber >25 MW
2020	North Carolina	ROWAN	BUCK	Coal Steam	2720	8	SCR and Scrubber
2020	North Carolina	ROWAN	BUCK	Coal Steam	2720	9	SCR and Scrubber
2020	North Carolina	ROWAN	BUCK	Coal Steam	2720	5	No SCR or Scrubber >25 MW
2020	North Carolina	ROWAN	BUCK	Coal Steam	2720	6	No SCR or Scrubber >25 MW
2020	North Carolina	ROWAN	BUCK	Coal Steam	2720	7	No SCR or Scrubber >25 MW
2020	North Carolina	STOKES	BELEWS CREEK	Coal Steam	8042	1	SCR and Scrubber
2020	North Carolina	STOKES	BELEWS CREEK	Coal Steam	8042	2	SCR and Scrubber
2020	North Carolina	WAYNE	LEE	Coal Steam	2709	3	SCR and Scrubber
2020	North Carolina	WAYNE	LEE	Coal Steam	2709	1	No SCR or Scrubber >25 MW
2020	North Carolina	WAYNE	LEE	Coal Steam	2709	2	No SCR or Scrubber >25 MW
2020	North Carolina		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	North Carolina		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	North Carolina		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	North Carolina		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	North Carolina		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	North Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	North Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	North Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
1.58	0.36	0.87	26.5	0.68	0.45	1.10		
1.58	0.36	0.87	26.5	0.68	0.45	1.10		
13.93	0.41	0.61	161.5	0.96	0.06	0.09		
13.93	0.41	0.61	161.5	0.96	0.06	0.09		
21.94	0.65	0.96	269.2	0.93	0.06	0.09		
11.23	0.39	0.37	130.2	0.96	0.07	0.07		
11.23	0.38	0.37	130.2	0.96	0.07	0.07		
22.38	0.62	0.74	259.4	0.96	0.06	0.07		
21.54	0.78	0.71	264.3	0.93	0.07	0.07		
7.56	0.23	0.98	94.0	0.92	0.06	0.26		
7.56	0.39	0.98	94.0	0.92	0.10	0.26		
4.13	0.93	0.15	52.0	0.91	0.45	0.08		
13.26	1.45	0.73	167.0	0.91	0.22	0.11		
31.97	0.98	1.07	401.4	0.91	0.06	0.07		
6.65	0.21	3.66	106.0	0.72	0.06	1.10		
5.94	0.32	0.71	97.0	0.70	0.11	0.24		
53.46	1.60	4.01	655.9	0.93	0.06	0.15		
27.57	0.83	0.90	346.1	0.91	0.06	0.07		
27.57	0.83	0.90	346.1	0.91	0.06	0.07		
30.72	0.92	1.02	376.9	0.93	0.06	0.07		
29.03	0.87	3.63	364.7	0.91	0.06	0.25		
29.03	0.87	3.63	364.7	0.91	0.06	0.25		
27.28	0.82	0.89	342.7	0.91	0.06	0.06		
27.28	0.82	0.89	342.7	0.91	0.06	0.06		
2.68	0.61	1.48	45.0	0.68	0.45	1.10		
4.62	0.20	0.25	49.0	0.96	0.09	0.11		
4.51	0.20	0.25	49.0	0.96	0.09	0.11		
6.39	0.15	0.35	78.0	0.93	0.05	0.11		
1.72	0.55	1.89	22.0	0.89	0.64	2.20		
11.99	0.44	0.53	139.0	0.96	0.07	0.09		
5.39	0.16	0.70	67.0	0.92	0.06	0.26		
5.39	0.16	0.70	67.0	0.92	0.06	0.26		
10.81	0.23	0.36	125.3	0.96	0.04	0.07		
10.81	0.23	0.36	125.3	0.96	0.04	0.07		
3.02	0.15	0.39	37.5	0.92	0.10	0.26		
3.02	0.16	0.39	37.5	0.92	0.11	0.26		
3.06	0.17	0.40	38.0	0.92	0.11	0.26		
87.34	2.61	9.17	1096.5	0.91	0.06	0.21		
87.34	3.51	9.17	1096.5	0.91	0.08	0.21		
20.11	0.61	0.68	246.7	0.93	0.06	0.07		
7.09	0.19	0.39	79.0	0.96	0.05	0.11		
4.15	0.23	0.50	76.0	0.62	0.11	0.24		
28.45	0.85	0.82	444.1	0.73	0.06	0.06		
28.45	0.85	0.82	444.1	0.73	0.06	0.06		
28.45	0.85	0.82	444.1	0.73	0.06	0.06		
28.45	0.85	0.82	444.1	0.73	0.06	0.06		
38.04	1.14	1.09	593.7	0.73	0.06	0.06		
0.07	0.00	0.00	1.2	0.73	0.06	0.06		
0.07	0.00	0.00	1.2	0.73	0.06	0.06		
0.07	0.00	0.00	1.2	0.73	0.06	0.06		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	North Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	North Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Ohio	ADAMS	J M STUART	Coal Steam	2850	1	SCR and Scrubber
2020	Ohio	ADAMS	J M STUART	Coal Steam	2850	2	SCR and Scrubber
2020	Ohio	ADAMS	J M STUART	Coal Steam	2850	3	SCR and Scrubber
2020	Ohio	ADAMS	J M STUART	Coal Steam	2850	4	SCR and Scrubber
2020	Ohio	ADAMS	KILLEN STATION	Coal Steam	6031	2	SCR and Scrubber
2020	Ohio	ASHTABULA	ASHTABULA	Coal Steam	2835	7	No SCR or Scrubber >25 MW
2020	Ohio	AUGLAIZE	ST MARYS	Coal Steam	2942	5	No SCR or Scrubber <=25 MW
2020	Ohio	AUGLAIZE	ST MARYS	Coal Steam	2942	6	No SCR or Scrubber <=25 MW
2020	Ohio	BELMONT	R E BURGER	Coal Steam	2864	7	SCR and Scrubber
2020	Ohio	BELMONT	R E BURGER	Coal Steam	2864	8	SCR and Scrubber
2020	Ohio	BELMONT	R E BURGER	Coal Steam	2864	5	No SCR or Scrubber >25 MW
2020	Ohio	BELMONT	R E BURGER	Coal Steam	2864	6	No SCR or Scrubber >25 MW
2020	Ohio	BUTLER	HAMILTON	Coal Steam	2917	9	Scrubber
2020	Ohio	BUTLER	HAMILTON	Coal Steam	2917	8	No SCR or Scrubber >25 MW
2020	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	4	SCR and Scrubber
2020	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	5	SCR and Scrubber
2020	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	6	SCR and Scrubber
2020	Ohio	CLERMONT	W H ZIMMER	Coal Steam	6019	1	SCR and Scrubber
2020	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	1	No SCR or Scrubber >25 MW
2020	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	2	No SCR or Scrubber >25 MW
2020	Ohio	CLERMONT	WALTER C BECKJORD	Coal Steam	2830	3	No SCR or Scrubber >25 MW
2020	Ohio	COSHOCTON	CONESVILLE	Coal Steam	2840	3	SCR and Scrubber
2020	Ohio	COSHOCTON	CONESVILLE	Coal Steam	2840	4	SCR and Scrubber
2020	Ohio	COSHOCTON	CONESVILLE	Coal Steam	2840	5	SCR and Scrubber
2020	Ohio	COSHOCTON	CONESVILLE	Coal Steam	2840	6	SCR and Scrubber
2020	Ohio	CUYAHOGA	LAKE SHORE	Coal Steam	2838	18	No SCR or Scrubber >25 MW
2020	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	4	SCR and Scrubber
2020	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	5	SCR and Scrubber
2020	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	2	SCR and Scrubber
2020	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	3	SCR and Scrubber
2020	Ohio	GALLIA	KYGER CREEK	Coal Steam	2876	1	SCR and Scrubber
2020	Ohio	GALLIA	GEN J M GAVIN	Coal Steam	8102	1	SCR and Scrubber
2020	Ohio	GALLIA	GEN J M GAVIN	Coal Steam	8102	2	SCR and Scrubber
2020	Ohio	HAMILTON	MIAMI FORT	Coal Steam	2832	8	SCR and Scrubber
2020	Ohio	HAMILTON	MIAMI FORT	Coal Steam	2832	7	SCR and Scrubber
2020	Ohio	HAMILTON	MIAMI FORT	Coal Steam	2832	6	No SCR or Scrubber >25 MW
2020	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	6	Scrubber
2020	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	7	Scrubber
2020	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	3	Scrubber
2020	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	2	Scrubber
2020	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	5	SCR and Scrubber
2020	Ohio	JEFFERSON	CARDINAL	Coal Steam	2828	2	SCR and Scrubber
2020	Ohio	JEFFERSON	CARDINAL	Coal Steam	2828	1	SCR and Scrubber
2020	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	1	SCR and Scrubber
2020	Ohio	JEFFERSON	W H SAMMIS	Coal Steam	2866	4	SCR and Scrubber
2020	Ohio	JEFFERSON	CARDINAL	Coal Steam	2828	3	SCR and Scrubber
2020	Ohio	LAKE	EASTLAKE	Coal Steam	2837	5	Scrubber
2020	Ohio	LAKE	EASTLAKE	Coal Steam	2837	1	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
0.07	0.00	0.00	1.2	0.73	0.06	0.06		
0.08	0.00	0.00	1.2	0.73	0.06	0.06		
42.83	1.60	4.55	572.7	0.85	0.07	0.21	X	X
42.01	1.45	4.47	572.7	0.84	0.07	0.21	X	X
42.88	1.22	4.56	572.7	0.85	0.06	0.21	X	X
42.99	1.19	4.57	572.7	0.86	0.06	0.21	X	X
44.72	1.34	4.73	587.4	0.87	0.06	0.21	X	X
15.42	2.92	6.69	243.0	0.72	0.38	0.87	X	X
0.59	0.13	0.64	6.0	0.96	0.45	2.20		
0.98	0.22	2.46	10.1	0.96	0.45	5.00		
13.17	0.40	0.79	152.7	0.96	0.06	0.12	X	
13.17	0.40	0.79	152.7	0.96	0.06	0.12	X	
2.78	0.55	1.39	47.0	0.67	0.39	1.00	X	
2.55	0.50	1.28	47.0	0.62	0.39	1.00	X	
4.39	0.76	0.56	50.0	0.96	0.35	0.26	X	X
1.65	0.26	0.82	32.1	0.59	0.32	1.00	X	X
12.13	0.40	0.73	146.8	0.94	0.07	0.12	X	X
18.09	0.64	1.09	232.9	0.89	0.07	0.12	X	X
32.40	0.87	1.94	405.4	0.91	0.05	0.12	X	X
92.73	2.78	4.64	1300.0	0.81	0.06	0.10	X	X
6.04	0.81	3.32	94.0	0.73	0.27	1.10	X	X
5.87	0.75	3.23	94.0	0.71	0.25	1.10	X	X
8.40	1.74	3.35	128.0	0.75	0.41	0.80	X	X
12.39	0.41	0.74	161.5	0.88	0.07	0.12	X	
56.27	1.65	3.38	763.6	0.84	0.06	0.12	X	
29.30	0.88	4.03	375.0	0.89	0.06	0.27	X	
28.33	0.85	3.90	375.0	0.86	0.06	0.27	X	
20.83	1.42	4.72	245.0	0.96	0.14	0.45	X	X
16.80	0.68	1.01	194.8	0.96	0.08	0.12	X	X
17.06	0.69	1.02	197.8	0.96	0.08	0.12	X	X
17.31	0.70	1.04	200.7	0.96	0.08	0.12	X	X
17.31	0.70	1.04	200.7	0.96	0.08	0.12	X	X
18.07	0.73	1.08	209.5	0.96	0.08	0.12	X	X
96.13	3.00	6.49	1300.0	0.84	0.06	0.13	X	X
95.56	2.75	6.45	1300.0	0.84	0.06	0.13	X	X
38.99	1.17	2.34	489.5	0.91	0.06	0.12	X	X
38.84	1.15	4.32	489.5	0.91	0.06	0.22	X	X
11.28	1.57	6.20	163.0	0.79	0.28	1.10	X	X
43.55	6.79	5.44	587.4	0.85	0.31	0.25	X	X
43.20	5.23	5.40	587.4	0.84	0.24	0.25	X	X
14.37	1.69	0.86	176.2	0.93	0.24	0.12	X	X
14.02	2.16	0.84	176.2	0.91	0.31	0.12	X	X
22.62	0.68	1.36	293.7	0.88	0.06	0.12	X	X
46.68	1.36	2.80	572.7	0.93	0.06	0.12	X	X
39.52	1.20	4.40	587.4	0.77	0.06	0.22	X	X
13.93	0.33	0.84	176.2	0.90	0.05	0.12	X	X
13.81	0.51	0.83	176.2	0.89	0.07	0.12	X	X
49.13	1.47	5.12	616.8	0.91	0.06	0.21	X	X
40.91	3.40	5.11	584.5	0.80	0.17	0.25	X	X
8.09	1.57	3.51	129.0	0.72	0.39	0.87	X	X

CAIR-CAMR-CAVR 2020

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Ohio	LAKE	EASTLAKE	Coal Steam	2837	2	No SCR or Scrubber >25 MW
2020	Ohio	LAKE	EASTLAKE	Coal Steam	2837	4	No SCR or Scrubber >25 MW
2020	Ohio	LAKE	EASTLAKE	Coal Steam	2837	3	No SCR or Scrubber >25 MW
2020	Ohio	LAKE	PAINESVILLE	Coal Steam	2936	3	No SCR or Scrubber <=25 MW
2020	Ohio	LAKE	PAINESVILLE	Coal Steam	2936	5	No SCR or Scrubber <=25 MW
2020	Ohio	LAKE	PAINESVILLE	Coal Steam	2936	4	No SCR or Scrubber <=25 MW
2020	Ohio	LORAIN	AVON LAKE	Coal Steam	2836	12	SCR and Scrubber
2020	Ohio	LORAIN	AVON LAKE	Coal Steam	2836	10	No SCR or Scrubber >25 MW
2020	Ohio	LUCAS	BAY SHORE	Coal Steam	2878	4	SCR and Scrubber
2020	Ohio	LUCAS	BAY SHORE	Coal Steam	2878	2	No SCR or Scrubber >25 MW
2020	Ohio	LUCAS	BAY SHORE	Coal Steam	2878	3	No SCR or Scrubber >25 MW
2020	Ohio	MIAMI	Piqua	Coal Steam	2937	10	No SCR or Scrubber <=25 MW
2020	Ohio	MIAMI	PIQUA	Coal Steam	2937	4	No SCR or Scrubber <=25 MW
2020	Ohio	MIAMI	PIQUA	Coal Steam	2937	5	No SCR or Scrubber <=25 MW
2020	Ohio	MIAMI	PIQUA	Coal Steam	2937	6	No SCR or Scrubber <=25 MW
2020	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-2	No SCR or Scrubber >25 MW
2020	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-1	No SCR or Scrubber >25 MW
2020	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-3	No SCR or Scrubber >25 MW
2020	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-4	No SCR or Scrubber >25 MW
2020	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-5	No SCR or Scrubber >25 MW
2020	Ohio	MONTGOMERY	O H HUTCHINGS	Coal Steam	2848	H-6	No SCR or Scrubber >25 MW
2020	Ohio	PICKAWAY	PICWAY	Coal Steam	2843	9	No SCR or Scrubber >25 MW
2020	Ohio	RICHLAND	SHELBY	Coal Steam	2943	1	No SCR or Scrubber <=25 MW
2020	Ohio	RICHLAND	SHELBY	Coal Steam	2943	2	No SCR or Scrubber <=25 MW
2020	Ohio	RICHLAND	SHELBY	Coal Steam	2943	4	No SCR or Scrubber <=25 MW
2020	Ohio	TRUMBULL	NILES	Coal Steam	2861	1	Scrubber
2020	Ohio	TUSCARAWAS	DOVER	Coal Steam	2914	4	No SCR or Scrubber <=25 MW
2020	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	1	SCR and Scrubber
2020	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	2	SCR and Scrubber
2020	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	3	SCR and Scrubber
2020	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	4	SCR and Scrubber
2020	Ohio	WASHINGTON	MUSKINGUM RIVER	Coal Steam	2872	5	SCR and Scrubber
2020	Ohio	WAYNE	ORRVILLE	Coal Steam	2935	13	No SCR or Scrubber >25 MW
2020	Ohio	WAYNE	ORRVILLE	Coal Steam	2935	12	No SCR or Scrubber >25 MW
2020	Ohio	WAYNE	ORRVILLE	Coal Steam	2935	10	No SCR or Scrubber <=25 MW
2020	Ohio	WAYNE	ORRVILLE	Coal Steam	2935	11	No SCR or Scrubber <=25 MW
2020	Pennsylvania	ALLEGHENY	CHESWICK	Coal Steam	8226	1	SCR and Scrubber
2020	Pennsylvania	ARMSTRONG	ARMSTRONG	Coal Steam	3178	2	Scrubber
2020	Pennsylvania	ARMSTRONG	ARMSTRONG	Coal Steam	3178	1	Scrubber
2020	Pennsylvania	ARMSTRONG	KEYSTONE	Coal Steam	3136	1	SCR and Scrubber
2020	Pennsylvania	ARMSTRONG	KEYSTONE	Coal Steam	3136	2	SCR and Scrubber
2020	Pennsylvania	BEAVER	BRUCE MANSFIELD	Coal Steam	6094	1	Scrubber
2020	Pennsylvania	BEAVER	BRUCE MANSFIELD	Coal Steam	6094	2	Scrubber
2020	Pennsylvania	BEAVER	AES BV Partners Beaver	Coal Steam	10676	GEN2	Scrubber
2020	Pennsylvania	BEAVER	AES BV Partners Beaver	Coal Steam	10676	GEN3	Scrubber
2020	Pennsylvania	BEAVER	BRUCE MANSFIELD	Coal Steam	6094	3	SCR and Scrubber
2020	Pennsylvania	CAMBRIA	Ebensburg Power Company	Coal Steam	10603	GEN1	Scrubber
2020	Pennsylvania	CAMBRIA	Cambria CoGen	Coal Steam	10641	GEN1	No SCR or Scrubber >25 MW
2020	Pennsylvania	CARBON	Panther Creek Energy	Coal Steam	50776	GEN1	Scrubber
2020	Pennsylvania	CHESTER	CROMBY	Coal Steam	3159	1	Scrubber

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
7.76	1.34	3.37	129.0	0.69	0.35	0.87	X	X
14.12	2.00	6.13	238.0	0.68	0.28	0.87	X	X
7.67	0.66	3.83	129.0	0.68	0.17	1.00	X	X
1.11	0.25	2.77	13.1	0.96	0.45	5.00	X	X
1.33	0.30	3.33	16.7	0.91	0.45	5.00	X	X
2.05	0.46	5.13	24.3	0.96	0.45	5.00	X	X
46.48	1.39	5.81	583.5	0.91	0.06	0.25	X	X
6.21	0.74	3.10	95.0	0.75	0.24	1.00	X	X
17.37	0.48	1.04	208.5	0.95	0.06	0.12		
8.64	1.36	3.45	134.0	0.74	0.32	0.80		
8.97	2.36	3.58	142.0	0.72	0.53	0.80		
0.07	0.02	0.10	0.8	0.96	0.45	3.00		
1.02	0.23	1.53	12.1	0.96	0.45	3.00		
1.02	0.23	1.53	12.1	0.96	0.45	3.00		
1.59	0.36	2.38	19.9	0.91	0.45	3.00		
3.70	0.51	1.85	55.0	0.77	0.28	1.00	X	
3.29	0.46	1.65	58.0	0.65	0.28	1.00	X	
3.29	0.43	1.64	63.0	0.60	0.26	1.00	X	
3.23	0.42	1.61	63.0	0.58	0.26	1.00	X	
3.35	0.43	1.68	63.0	0.61	0.26	1.00	X	
3.42	0.44	1.71	63.0	0.62	0.26	1.00	X	
4.89	1.02	2.44	90.0	0.62	0.42	1.00		
0.48	0.11	1.21	6.0	0.91	0.45	5.00		
0.48	0.11	1.21	6.0	0.91	0.45	5.00		
0.60	0.13	1.49	7.1	0.96	0.45	5.00		
5.37	1.26	0.59	69.0	0.89	0.47	0.22		
1.21	0.27	1.81	15.1	0.91	0.45	3.00		
14.62	0.50	0.88	186.0	0.90	0.07	0.12	X	
14.64	0.51	0.88	186.0	0.90	0.07	0.12	X	
15.33	0.53	0.92	200.7	0.87	0.07	0.12	X	
15.19	0.52	0.91	200.7	0.86	0.07	0.12	X	
40.27	1.39	5.03	562.9	0.82	0.07	0.25	X	
1.76	0.40	0.88	30.0	0.67	0.45	1.00		
1.92	0.43	0.96	32.0	0.68	0.45	1.00		
1.11	0.25	2.77	10.3	0.96	0.45	5.00		
1.11	0.25	2.77	10.3	0.96	0.45	5.00		
42.40	1.27	4.59	550.2	0.88	0.06	0.22	X	X
12.99	1.57	0.78	167.4	0.89	0.24	0.12	X	X
12.73	1.67	0.76	168.4	0.86	0.26	0.12	X	X
60.30	1.48	5.14	832.2	0.83	0.05	0.17	X	X
59.24	1.47	5.05	832.2	0.81	0.05	0.17	X	X
53.22	1.62	4.99	781.0	0.78	0.06	0.19	X	X
53.17	1.57	4.99	785.0	0.77	0.06	0.19	X	X
2.29	0.47	0.33	28.9	0.91	0.41	0.28	X	X
7.79	1.61	1.11	98.1	0.91	0.41	0.28	X	X
52.89	1.68	4.36	805.0	0.75	0.06	0.17	X	X
4.39	0.20	0.48	51.0	0.96	0.09	0.22	X	
6.28	0.44	4.71	87.0	0.82	0.14	1.50	X	
8.91	0.54	0.73	82.6	0.96	0.12	0.16		
10.49	1.30	1.63	144.0	0.83	0.25	0.31	X	

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Pennsylvania	CLARION	Piney Creek Project	Coal Steam	54144	GEN1	Scrubber
2020	Pennsylvania	CLEARFIELD	SHAWVILLE	Coal Steam	3131	3	SCR and Scrubber
2020	Pennsylvania	CLEARFIELD	SHAWVILLE	Coal Steam	3131	4	SCR and Scrubber
2020	Pennsylvania	CLEARFIELD	SHAWVILLE	Coal Steam	3131	2	SCR and Scrubber
2020	Pennsylvania	CLEARFIELD	SHAWVILLE	Coal Steam	3131	1	No SCR or Scrubber >25 MW
2020	Pennsylvania	DELAWARE	Chester Operations	Coal Steam	50410	T5	Scrubber
2020	Pennsylvania	DELAWARE	EDDYSTONE	Coal Steam	3161	1	SCR and Scrubber
2020	Pennsylvania	DELAWARE	EDDYSTONE	Coal Steam	3161	2	SCR and Scrubber
2020	Pennsylvania	ERIE	General Electric Erie PA Power Station	Coal Steam	50358	STM2	No SCR or Scrubber <=25 MW
2020	Pennsylvania	ERIE	General Electric Erie PA Power Station	Coal Steam	50358	STM3	No SCR or Scrubber <=25 MW
2020	Pennsylvania	ERIE	General Electric Erie PA Power Station	Coal Steam	50358	STM4	No SCR or Scrubber <=25 MW
2020	Pennsylvania	GREENE	HATFIELD'S FERRY	Coal Steam	3179	1	Scrubber
2020	Pennsylvania	GREENE	HATFIELD'S FERRY	Coal Steam	3179	2	SCR and Scrubber
2020	Pennsylvania	GREENE	HATFIELD'S FERRY	Coal Steam	3179	3	SCR and Scrubber
2020	Pennsylvania	INDIANA	HOMER CITY	Coal Steam	3122	2	SCR and Scrubber
2020	Pennsylvania	INDIANA	HOMER CITY	Coal Steam	3122	1	SCR and Scrubber
2020	Pennsylvania	INDIANA	HOMER CITY	Coal Steam	3122	3	SCR and Scrubber
2020	Pennsylvania	INDIANA	CONEMAUGH	Coal Steam	3118	1	SCR and Scrubber
2020	Pennsylvania	INDIANA	CONEMAUGH	Coal Steam	3118	2	SCR and Scrubber
2020	Pennsylvania	LAWRENCE	NEW CASTLE	Coal Steam	3138	5	SCR and Scrubber
2020	Pennsylvania	LAWRENCE	NEW CASTLE	Coal Steam	3138	3	No SCR or Scrubber >25 MW
2020	Pennsylvania	LAWRENCE	NEW CASTLE	Coal Steam	3138	4	No SCR or Scrubber >25 MW
2020	Pennsylvania	MONTOUR	MONTOUR	Coal Steam	3149	2	SCR and Scrubber
2020	Pennsylvania	MONTOUR	MONTOUR	Coal Steam	3149	1	SCR and Scrubber
2020	Pennsylvania	NORTHAMPTON	Northhampton Generating Company L P	Coal Steam	50888	GEN1	Scrubber
2020	Pennsylvania	NORTHAMPTON	PORTLAND	Coal Steam	3113	2	SCR and Scrubber
2020	Pennsylvania	NORTHUMBERLAND	Foster Wheeler Mt Carmel Incorporated	Coal Steam	10343	TG1	Scrubber
2020	Pennsylvania	SCHUYLKILL	Wheeler Frackville Energy Company Inc	Coal Steam	50879	GEN1	Scrubber
2020	Pennsylvania	SCHUYLKILL	Kline Township Cogen Facil	Coal Steam	50039	GEN1	Scrubber
2020	Pennsylvania	SCHUYLKILL	St Nicholas Cogeneration Project	Coal Steam	54634	SNCP	No SCR or Scrubber >25 MW
2020	Pennsylvania	SNYDER	SUNBURY	Coal Steam	3152	4	No SCR or Scrubber >25 MW
2020	Pennsylvania	VENANGO	Scrubgrass Generating Company L P	Coal Steam	50974	GEN1	Scrubber
2020	Pennsylvania	WARREN	WARREN	Coal Steam	3132	1	No SCR or Scrubber <=25 MW
2020	Pennsylvania	WARREN	WARREN	Coal Steam	3132	2	No SCR or Scrubber <=25 MW
2020	Pennsylvania	WARREN	WARREN	Coal Steam	3132	3	No SCR or Scrubber <=25 MW
2020	Pennsylvania	WARREN	WARREN	Coal Steam	3132	4	No SCR or Scrubber <=25 MW
2020	Pennsylvania	WASHINGTON	ELRAMA	Coal Steam	3098	1	Scrubber
2020	Pennsylvania	WASHINGTON	ELRAMA	Coal Steam	3098	2	Scrubber
2020	Pennsylvania	WASHINGTON	ELRAMA	Coal Steam	3098	3	Scrubber
2020	Pennsylvania	WASHINGTON	ELRAMA	Coal Steam	3098	4	Scrubber
2020	Pennsylvania	WASHINGTON	MITCHELL	Coal Steam	3181	33	SCR and Scrubber
2020	Pennsylvania	YORK	BRUNNER ISLAND	Coal Steam	3140	1	Scrubber
2020	Pennsylvania	YORK	BRUNNER ISLAND	Coal Steam	3140	2	SCR and Scrubber
2020	Pennsylvania	YORK	BRUNNER ISLAND	Coal Steam	3140	3	SCR and Scrubber
2020	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN3	No SCR or Scrubber <=25 MW
2020	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN2	No SCR or Scrubber <=25 MW
2020	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN1	No SCR or Scrubber <=25 MW
2020	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN4	No SCR or Scrubber <=25 MW
2020	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN6	No SCR or Scrubber <=25 MW
2020	Pennsylvania	YORK	P H Glatfelter Company	Coal Steam	50397	GEN5	No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
3.45	0.27	0.38	31.9	0.96	0.16	0.22		
13.46	0.42	0.61	171.3	0.90	0.06	0.09		
13.50	0.43	0.61	171.3	0.90	0.06	0.09		
10.25	0.31	1.35	125.0	0.94	0.06	0.26		
7.59	1.84	4.17	122.0	0.71	0.48	1.10		
0.69	0.04	0.36	8.0	0.96	0.12	1.04	X	
22.18	0.71	1.61	279.0	0.91	0.06	0.15	X	
24.39	0.69	1.77	302.0	0.92	0.06	0.15	X	
0.08	0.02	0.09	1.1	0.91	0.45	2.20		
0.16	0.04	0.17	2.0	0.91	0.45	2.20		
0.16	0.04	0.17	2.0	0.91	0.45	2.20		
36.92	5.49	2.21	489.5	0.86	0.30	0.12	X	X
37.00	1.11	2.22	489.5	0.86	0.06	0.12	X	X
36.88	1.11	2.21	489.5	0.86	0.06	0.12	X	X
41.09	1.44	3.50	601.1	0.78	0.07	0.17	X	
44.33	1.45	3.78	607.0	0.83	0.07	0.17	X	
49.78	1.49	2.74	650.0	0.87	0.06	0.11	X	
60.33	1.83	1.33	850.0	0.81	0.06	0.04	X	
59.63	1.77	1.32	850.0	0.80	0.06	0.04	X	
11.86	0.36	0.71	134.1	0.96	0.06	0.12	X	X
4.80	0.86	2.64	98.0	0.56	0.36	1.10	X	X
4.76	0.79	2.62	98.0	0.56	0.33	1.10	X	X
50.55	1.73	4.31	729.4	0.79	0.07	0.17		
50.11	1.58	4.27	744.0	0.77	0.06	0.17		
8.79	0.53	0.48	102.0	0.96	0.12	0.11		
18.87	0.57	0.90	237.9	0.91	0.06	0.10		
3.48	0.18	0.28	40.4	0.96	0.10	0.16		
3.66	0.22	0.41	42.5	0.96	0.12	0.22		
4.27	0.26	0.47	49.6	0.96	0.12	0.22		
6.54	0.22	3.60	101.0	0.74	0.07	1.10		
7.77	1.17	4.27	128.0	0.69	0.30	1.10		
6.41	0.51	1.31	62.0	0.96	0.12	0.31		
2.07	0.47	2.27	20.5	0.96	0.45	2.20		
2.07	0.47	2.27	20.5	0.96	0.45	2.20		
2.21	0.50	2.43	20.5	0.96	0.45	2.20		
1.73	0.39	1.90	20.5	0.96	0.45	2.20		
8.10	1.25	0.67	97.0	0.95	0.31	0.16	X	X
7.82	1.20	0.64	97.0	0.92	0.31	0.16	X	X
9.87	1.52	0.81	109.0	0.96	0.31	0.16	X	X
13.77	2.12	1.14	171.0	0.92	0.31	0.16	X	X
21.41	0.53	1.77	275.0	0.89	0.05	0.17	X	X
24.38	4.40	1.15	314.3	0.89	0.36	0.09	X	
27.43	0.79	1.23	370.1	0.85	0.06	0.09	X	
52.04	1.55	2.34	719.6	0.83	0.06	0.09	X	
0.16	0.03	0.17	1.9	0.96	0.37	2.20	X	
0.18	0.05	0.20	2.2	0.96	0.57	2.20	X	
0.19	0.05	0.20	2.2	0.96	0.57	2.20	X	
0.22	0.04	0.24	2.7	0.91	0.37	2.20	X	
1.04	0.18	1.15	14.0	0.85	0.34	2.20	X	
1.25	0.17	1.37	16.0	0.89	0.27	2.20	X	

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	South Carolina	AIKEN	URQUHART	Coal Steam	3295	URQ3	No SCR or Scrubber >25 MW
2020	South Carolina	AIKEN	USDOE SRS (D-Area)	Coal Steam	7652	1	No SCR or Scrubber >25 MW
2020	South Carolina	ANDERSON	W S LEE	Coal Steam	3264	1	No SCR or Scrubber >25 MW
2020	South Carolina	ANDERSON	W S LEE	Coal Steam	3264	2	No SCR or Scrubber >25 MW
2020	South Carolina	ANDERSON	W S LEE	Coal Steam	3264	3	No SCR or Scrubber >25 MW
2020	South Carolina	BERKELEY	WILLIAMS	Coal Steam	3298	WIL1	SCR and Scrubber
2020	South Carolina	BERKELEY	CROSS	Coal Steam	130	2	SCR and Scrubber
2020	South Carolina	BERKELEY	CROSS	Coal Steam	130	1	SCR and Scrubber
2020	South Carolina	BERKELEY	JEFFERIES	Coal Steam	3319	3	SCR
2020	South Carolina	BERKELEY	JEFFERIES	Coal Steam	3319	4	No SCR or Scrubber >25 MW
2020	South Carolina	CHARLESTON	Cogen South	Coal Steam	7737	1	Scrubber
2020	South Carolina	COLLETON	CANADYS STEAM	Coal Steam	3280	CAN1	No SCR or Scrubber >25 MW
2020	South Carolina	COLLETON	CANADYS STEAM	Coal Steam	3280	CAN2	No SCR or Scrubber >25 MW
2020	South Carolina	COLLETON	CANADYS STEAM	Coal Steam	3280	CAN3	No SCR or Scrubber >25 MW
2020	South Carolina	DARLINGTON	H B ROBINSON	Coal Steam	3251	1	No SCR or Scrubber >25 MW
2020	South Carolina	GEORGETOWN	WINYAH	Coal Steam	6249	1	SCR and Scrubber
2020	South Carolina	GEORGETOWN	WINYAH	Coal Steam	6249	2	SCR and Scrubber
2020	South Carolina	GEORGETOWN	WINYAH	Coal Steam	6249	3	SCR and Scrubber
2020	South Carolina	GEORGETOWN	WINYAH	Coal Steam	6249	4	SCR and Scrubber
2020	South Carolina	HORRY	DOLPHUS M GRAINGER	Coal Steam	3317	1	No SCR or Scrubber >25 MW
2020	South Carolina	HORRY	DOLPHUS M GRAINGER	Coal Steam	3317	2	No SCR or Scrubber >25 MW
2020	South Carolina	LEXINGTON	MCMEEKIN	Coal Steam	3287	MCM1	No SCR or Scrubber >25 MW
2020	South Carolina	LEXINGTON	MCMEEKIN	Coal Steam	3287	MCM2	No SCR or Scrubber >25 MW
2020	South Carolina	ORANGEBURG	COPE	Coal Steam	7210	COP1	Scrubber
2020	South Carolina	RICHLAND	WATEREE	Coal Steam	3297	WAT1	SCR and Scrubber
2020	South Carolina	RICHLAND	WATEREE	Coal Steam	3297	WAT2	SCR and Scrubber
2020	South Carolina		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	South Carolina		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	South Carolina		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	South Carolina		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	South Carolina		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	South Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	South Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	South Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	South Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	South Carolina		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Tennessee	ANDERSON	BULL RUN	Coal Steam	3396	1	SCR and Scrubber
2020	Tennessee	HAWKINS	JOHN SEVIER	Coal Steam	3405	1	SCR and Scrubber
2020	Tennessee	HAWKINS	JOHN SEVIER	Coal Steam	3405	2	SCR and Scrubber
2020	Tennessee	HAWKINS	JOHN SEVIER	Coal Steam	3405	3	SCR and Scrubber
2020	Tennessee	HAWKINS	JOHN SEVIER	Coal Steam	3405	4	SCR and Scrubber
2020	Tennessee	HUMPHREYS	JOHNSONVILLE	Coal Steam	3406	10	SCR
2020	Tennessee	HUMPHREYS	JOHNSONVILLE	Coal Steam	3406	9	SCR
2020	Tennessee	ROANE	KINGSTON	Coal Steam	3407	9	SCR and Scrubber
2020	Tennessee	ROANE	KINGSTON	Coal Steam	3407	1	SCR and Scrubber
2020	Tennessee	ROANE	KINGSTON	Coal Steam	3407	2	SCR and Scrubber
2020	Tennessee	ROANE	KINGSTON	Coal Steam	3407	3	SCR and Scrubber
2020	Tennessee	ROANE	KINGSTON	Coal Steam	3407	4	SCR and Scrubber
2020	Tennessee	ROANE	KINGSTON	Coal Steam	3407	5	SCR and Scrubber
2020	Tennessee	ROANE	KINGSTON	Coal Steam	3407	6	SCR and Scrubber

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
6.03	1.04	3.32	100.0	0.69	0.35	1.10		
2.11	0.47	1.16	35.0	0.69	0.45	1.10		
6.40	1.26	3.52	100.0	0.73	0.39	1.10		
6.09	1.26	3.35	100.0	0.70	0.41	1.10		
11.08	1.28	6.09	170.0	0.74	0.23	1.10		
39.91	1.22	1.28	548.2	0.83	0.06	0.06		
42.11	1.26	7.80	540.0	0.89	0.06	0.37		
44.85	1.35	2.59	560.0	0.91	0.06	0.12		
11.41	0.34	6.27	153.0	0.85	0.06	1.10		
10.07	2.19	5.54	153.0	0.75	0.43	1.10		
4.40	0.99	0.17	55.0	0.91	0.45	0.08		
7.92	1.37	4.36	125.0	0.72	0.34	1.10		
7.83	1.72	4.31	125.0	0.72	0.44	1.10		
13.77	2.86	7.57	180.0	0.87	0.42	1.10		
10.79	1.52	5.94	174.0	0.71	0.28	1.10		
21.05	0.63	0.70	264.3	0.91	0.06	0.07		
21.05	0.63	0.70	264.3	0.91	0.06	0.07		
21.05	0.63	1.58	270.0	0.89	0.06	0.15		
21.19	0.64	1.59	270.0	0.90	0.06	0.15		
5.46	1.22	3.00	85.0	0.73	0.45	1.10		
5.47	1.51	3.01	85.0	0.73	0.55	1.10		
8.99	1.76	4.94	126.0	0.81	0.39	1.10		
8.97	1.59	4.94	126.0	0.81	0.35	1.10		
27.08	3.28	1.49	385.0	0.80	0.24	0.11		
27.29	0.82	0.91	342.7	0.91	0.06	0.07		
27.29	0.80	0.88	342.7	0.91	0.06	0.06		
24.40	0.73	0.70	380.8	0.73	0.06	0.06		
24.40	0.73	0.70	380.8	0.73	0.06	0.06		
24.40	0.73	0.70	380.8	0.73	0.06	0.06		
24.40	0.73	0.70	380.8	0.73	0.06	0.06		
32.62	0.98	0.94	509.1	0.73	0.06	0.06		
0.06	0.00	0.00	1.0	0.73	0.06	0.06		
0.06	0.00	0.00	1.0	0.73	0.06	0.06		
0.06	0.00	0.00	1.0	0.73	0.06	0.06		
0.06	0.00	0.00	1.0	0.73	0.06	0.06		
0.07	0.00	0.00	1.0	0.73	0.06	0.06		
69.26	2.08	8.66	849.8	0.93	0.06	0.25	X	X
13.20	0.39	0.41	172.3	0.87	0.06	0.06		
13.25	0.40	0.42	172.3	0.88	0.06	0.06		
12.83	0.39	0.40	172.3	0.85	0.06	0.06		
13.18	0.40	0.41	172.3	0.87	0.06	0.06		
9.74	0.29	4.87	141.0	0.79	0.06	1.00		
10.95	0.33	5.47	141.0	0.89	0.06	1.00		
15.03	0.45	0.50	174.3	0.96	0.06	0.07	X	X
11.48	0.39	0.35	133.1	0.96	0.07	0.06	X	X
11.48	0.39	0.35	133.1	0.96	0.07	0.06	X	X
11.48	0.39	0.35	133.1	0.96	0.07	0.06	X	X
11.48	0.39	0.35	133.1	0.96	0.07	0.06	X	X
15.03	0.51	0.46	174.3	0.96	0.07	0.06	X	X
15.03	0.37	0.46	174.3	0.96	0.05	0.06	X	X

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Tennessee	ROANE	KINGSTON	Coal Steam	3407	7	SCR and Scrubber
2020	Tennessee	ROANE	KINGSTON	Coal Steam	3407	8	SCR and Scrubber
2020	Tennessee	SHELBY	ALLEN	Coal Steam	3393	1	SCR
2020	Tennessee	SHELBY	ALLEN	Coal Steam	3393	2	SCR
2020	Tennessee	SHELBY	ALLEN	Coal Steam	3393	3	SCR
2020	Tennessee	STEWART	CUMBERLAND	Coal Steam	3399	2	SCR and Scrubber
2020	Tennessee	STEWART	CUMBERLAND	Coal Steam	3399	1	SCR and Scrubber
2020	Tennessee	SUMNER	GALLATIN	Coal Steam	3403	1	Scrubber
2020	Tennessee	SUMNER	GALLATIN	Coal Steam	3403	2	Scrubber
2020	Tennessee	SUMNER	GALLATIN	Coal Steam	3403	3	Scrubber
2020	Tennessee	SUMNER	GALLATIN	Coal Steam	3403	4	Scrubber
2020	Texas	ATASCOSA	SAN MIGUEL	Coal Steam	6183	SM-1	Scrubber
2020	Texas	BEXAR	J K SPRUCE	Coal Steam	7097	BLR1	Scrubber
2020	Texas	BEXAR	J T DEELY	Coal Steam	6181	1	No SCR or Scrubber >25 MW
2020	Texas	BEXAR	J T DEELY	Coal Steam	6181	2	No SCR or Scrubber >25 MW
2020	Texas	FAYETTE	SAM SEYMOUR	Coal Steam	6179	3	Scrubber
2020	Texas	FAYETTE	SAM SEYMOUR	Coal Steam	6179	1	No SCR or Scrubber >25 MW
2020	Texas	FAYETTE	SAM SEYMOUR	Coal Steam	6179	2	No SCR or Scrubber >25 MW
2020	Texas	FORT BEND	W A PARISH	Coal Steam	3470	WAP7	SCR and Scrubber
2020	Texas	FORT BEND	W A PARISH	Coal Steam	3470	WAP5	SCR and Scrubber
2020	Texas	FORT BEND	W A PARISH	Coal Steam	3470	WAP6	SCR and Scrubber
2020	Texas	FORT BEND	W A PARISH	Coal Steam	3470	WAP8	SCR and Scrubber
2020	Texas	FREESTONE	BIG BROWN	Coal Steam	3497	1	Scrubber
2020	Texas	FREESTONE	BIG BROWN	Coal Steam	3497	2	Scrubber
2020	Texas	GOLIAD	COLETO CREEK	Coal Steam	6178	1	No SCR or Scrubber >25 MW
2020	Texas	GRAY	Celanese	Coal Steam	7678	2	No SCR or Scrubber >25 MW
2020	Texas	GRIMES	GIBBONS CREEK	Coal Steam	6136	1	Scrubber
2020	Texas	HARRISON	PIRKEY	Coal Steam	7902	1	Scrubber
2020	Texas	LAMB	TOLK STATION	Coal Steam	6194	171B	No SCR or Scrubber >25 MW
2020	Texas	LAMB	TOLK STATION	Coal Steam	6194	172B	No SCR or Scrubber >25 MW
2020	Texas	LIMESTONE	LIMESTONE	Coal Steam	298	LIM2	Scrubber
2020	Texas	LIMESTONE	LIMESTONE	Coal Steam	298	LIM1	Scrubber
2020	Texas	MILAM	SANDOW	Coal Steam	6648	4	Scrubber
2020	Texas	POTTER	HARRINGTON STATION	Coal Steam	6193	061B	No SCR or Scrubber >25 MW
2020	Texas	POTTER	HARRINGTON STATION	Coal Steam	6193	062B	No SCR or Scrubber >25 MW
2020	Texas	POTTER	HARRINGTON STATION	Coal Steam	6193	063B	No SCR or Scrubber >25 MW
2020	Texas	ROBERTSON	TNP ONE	Coal Steam	7030	U1	Scrubber
2020	Texas	ROBERTSON	TNP ONE	Coal Steam	7030	U2	Scrubber
2020	Texas	RUSK	MARTIN LAKE	Coal Steam	6146	1	Scrubber
2020	Texas	RUSK	MARTIN LAKE	Coal Steam	6146	2	Scrubber
2020	Texas	RUSK	MARTIN LAKE	Coal Steam	6146	3	Scrubber
2020	Texas	TITUS	MONTICELLO	Coal Steam	6147	1	Scrubber
2020	Texas	TITUS	MONTICELLO	Coal Steam	6147	2	Scrubber
2020	Texas	TITUS	MONTICELLO	Coal Steam	6147	3	Scrubber
2020	Texas	TITUS	WELSH	Coal Steam	6139	2	SCR and Scrubber
2020	Texas	TITUS	WELSH	Coal Steam	6139	3	SCR and Scrubber
2020	Texas	TITUS	WELSH	Coal Steam	6139	1	No SCR or Scrubber >25 MW
2020	Texas	WILBARGER	OKLAUNION	Coal Steam	127	1	Scrubber
2020	Texas		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Texas		NEW	Coal Steam			No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
15.03	0.37	0.46	174.3	0.96	0.05	0.06	X	X
15.03	0.37	0.46	174.3	0.96	0.05	0.06	X	X
18.54	0.66	6.95	248.0	0.85	0.07	0.75		
19.69	0.71	7.13	248.0	0.91	0.07	0.72		
19.84	0.69	7.18	248.0	0.91	0.07	0.72		
95.49	3.75	11.94	1224.0	0.89	0.08	0.25		
96.58	2.01	12.07	1238.0	0.89	0.04	0.25		
16.63	2.36	4.52	223.0	0.85	0.28	0.54		
16.84	2.39	4.58	223.0	0.86	0.28	0.54		
19.33	3.38	5.25	260.7	0.85	0.35	0.54		
19.11	3.34	5.19	260.7	0.84	0.35	0.54		
34.49	4.16	5.70	391.0	0.96	0.24	0.33		
35.23	2.43	4.35	530.0	0.76	0.14	0.25		
31.51	2.06	10.84	405.0	0.89	0.13	0.69		
30.99	2.03	10.66	405.0	0.87	0.13	0.69		
33.64	2.41	2.51	435.0	0.88	0.14	0.15		
45.25	4.07	15.43	580.0	0.89	0.18	0.68		
45.23	3.12	15.42	580.0	0.89	0.14	0.68		
43.98	1.34	3.30	548.2	0.92	0.06	0.15		
49.78	1.62	3.73	636.4	0.89	0.07	0.15		
50.80	1.38	3.81	636.4	0.91	0.05	0.15		
43.22	1.30	5.83	555.0	0.89	0.06	0.27		
46.27	3.57	2.31	562.9	0.94	0.15	0.10		
47.27	3.72	2.36	562.9	0.96	0.16	0.10		
47.35	4.26	16.10	632.0	0.86	0.18	0.68		
1.69	0.38	0.85	26.0	0.74	0.45	1.00		
31.96	1.87	1.34	405.0	0.90	0.12	0.08		
35.37	3.38	12.82	580.0	0.70	0.19	0.72		
40.05	2.70	11.49	540.0	0.85	0.13	0.57		
36.47	2.51	10.47	540.0	0.77	0.14	0.57		
56.44	4.80	2.37	720.0	0.89	0.17	0.08		
57.67	4.89	9.53	720.0	0.91	0.17	0.33		
44.28	5.49	7.32	545.0	0.93	0.25	0.33		
25.98	1.78	7.11	346.0	0.86	0.14	0.55		
27.50	1.91	7.89	360.0	0.87	0.14	0.57		
26.89	1.85	7.72	360.0	0.85	0.14	0.57		
12.54	1.23	0.84	150.0	0.95	0.20	0.13		
12.45	1.09	0.83	150.0	0.95	0.18	0.13		
59.77	8.48	9.88	750.0	0.91	0.28	0.33		
63.11	5.23	10.43	750.0	0.96	0.17	0.33		
65.27	5.09	10.79	750.0	0.96	0.16	0.33		
38.28	3.04	1.91	553.1	0.79	0.16	0.10		
39.38	4.55	1.97	553.1	0.81	0.23	0.10		
62.57	5.81	10.34	750.0	0.95	0.19	0.33		
41.46	1.69	1.24	516.9	0.92	0.08	0.06		
41.47	0.80	1.24	516.9	0.92	0.04	0.06		
42.20	3.61	11.65	528.0	0.91	0.17	0.55		
52.80	6.23	7.08	676.0	0.89	0.24	0.27		
13.35	0.40	0.50	206.2	0.74	0.06	0.07		
213.10	6.39	7.99	3326.1	0.73	0.06	0.08		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Virginia	ALEXANDRIA (CITY)	POTOMAC RIVER	Coal Steam	3788	5	No SCR or Scrubber >25 MW
2020	Virginia	ALEXANDRIA (CITY)	POTOMAC RIVER	Coal Steam	3788	3	No SCR or Scrubber >25 MW
2020	Virginia	ALEXANDRIA (CITY)	POTOMAC RIVER	Coal Steam	3788	4	No SCR or Scrubber >25 MW
2020	Virginia	CAMPBELL	LG&E Westmoreland	Coal Steam	10773	GEN1	Scrubber
2020	Virginia	CHESAPEAKE (CITY)	CHESAPEAKE	Coal Steam	3803	3	SCR and Scrubber
2020	Virginia	CHESAPEAKE (CITY)	CHESAPEAKE	Coal Steam	3803	4	SCR and Scrubber
2020	Virginia	CHESAPEAKE (CITY)	CHESAPEAKE	Coal Steam	3803	1	No SCR or Scrubber >25 MW
2020	Virginia	CHESAPEAKE (CITY)	CHESAPEAKE	Coal Steam	3803	2	No SCR or Scrubber >25 MW
2020	Virginia	CHESTERFIELD	CHESTERFIELD	Coal Steam	3797	4	SCR and Scrubber
2020	Virginia	CHESTERFIELD	CHESTERFIELD	Coal Steam	3797	5	SCR and Scrubber
2020	Virginia	CHESTERFIELD	CHESTERFIELD	Coal Steam	3797	6	SCR and Scrubber
2020	Virginia	CHESTERFIELD	CHESTERFIELD	Coal Steam	3797	3	No SCR or Scrubber >25 MW
2020	Virginia	FLUVANNA	BREMO POWER STATION	Coal Steam	3796	3	No SCR or Scrubber >25 MW
2020	Virginia	FLUVANNA	BREMO POWER STATION	Coal Steam	3796	4	No SCR or Scrubber >25 MW
2020	Virginia	GILES	GLEN LYN	Coal Steam	3776	6	SCR and Scrubber
2020	Virginia	GILES	GLEN LYN	Coal Steam	3776	51	No SCR or Scrubber >25 MW
2020	Virginia	GILES	GLEN LYN	Coal Steam	3776	52	No SCR or Scrubber >25 MW
2020	Virginia	HALIFAX	CLOVER	Coal Steam	7213	1	Scrubber
2020	Virginia	HALIFAX	CLOVER	Coal Steam	7213	2	Scrubber
2020	Virginia	HOPEWELL (CITY)	LG&E Westmoreland	Coal Steam	10771	GEN1	Scrubber
2020	Virginia	HOPEWELL (CITY)	Cogentrix Hopewell	Coal Steam	10377	GEN1	No SCR or Scrubber >25 MW
2020	Virginia	HOPEWELL (CITY)	Cogentrix Hopewell	Coal Steam	10377	GEN2	No SCR or Scrubber >25 MW
2020	Virginia	KING GEORGE	SEI Birchwood Power Facility	Coal Steam	54304	1	Scrubber
2020	Virginia	MECKLENBURG	Mecklenburg Cogeneration Facility	Coal Steam	52007	GEN1	Scrubber
2020	Virginia	MECKLENBURG	Mecklenburg Cogeneration Facility	Coal Steam	52007	GEN2	Scrubber
2020	Virginia	PORTSMOUTH (CITY	Cogentrix Portsmouth	Coal Steam	10071	GEN1	No SCR or Scrubber >25 MW
2020	Virginia	PORTSMOUTH (CITY	Cogentrix Portsmouth	Coal Steam	10071	GEN2	No SCR or Scrubber >25 MW
2020	Virginia	RICHMOND (CITY)	Cogentrix of Richmond Incorporated	Coal Steam	54081	GEN1	Scrubber
2020	Virginia	RICHMOND (CITY)	Cogentrix of Richmond Incorporated	Coal Steam	54081	GEN2	Scrubber
2020	Virginia	RICHMOND (CITY)	Cogentrix of Richmond Incorporated	Coal Steam	54081	GEN3	Scrubber
2020	Virginia	RICHMOND (CITY)	Cogentrix of Richmond Incorporated	Coal Steam	54081	GEN4	Scrubber
2020	Virginia	RUSSELL	CLINCH RIVER	Coal Steam	3775	1	SCR and Scrubber
2020	Virginia	RUSSELL	CLINCH RIVER	Coal Steam	3775	2	SCR and Scrubber
2020	Virginia	RUSSELL	CLINCH RIVER	Coal Steam	3775	3	SCR and Scrubber
2020	Virginia	SOUTHAMPTON	LG&E Westmoreland Southampton	Coal Steam	10774	GEN1	Scrubber
2020	Virginia	YORK	YORKTOWN	Coal Steam	3809	1	No SCR or Scrubber >25 MW
2020	Virginia	YORK	YORKTOWN	Coal Steam	3809	2	No SCR or Scrubber >25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
6.12	1.20	3.37	102.0	0.69	0.39	1.10	X	
6.49	1.34	3.57	102.0	0.73	0.41	1.10	X	
6.51	1.27	3.58	102.0	0.73	0.39	1.10	X	
4.99	0.44	0.78	57.1	0.96	0.18	0.31		
11.52	0.35	0.69	152.7	0.86	0.06	0.12		
17.31	0.52	1.04	212.4	0.93	0.06	0.12		
6.78	1.00	3.73	111.0	0.70	0.30	1.10		
6.59	0.84	3.62	111.0	0.68	0.25	1.10		
12.40	0.37	0.74	162.5	0.87	0.06	0.12		
26.01	0.78	1.56	319.2	0.93	0.06	0.12		
55.05	1.50	3.63	696.5	0.90	0.05	0.13		
6.63	0.80	3.65	100.0	0.76	0.24	1.10		
4.07	0.72	2.24	71.0	0.65	0.35	1.10		
9.52	1.34	5.24	156.0	0.70	0.28	1.10		
16.59	0.52	0.50	230.1	0.82	0.06	0.06		
2.64	0.60	1.45	45.0	0.67	0.46	1.10		
2.95	0.59	1.62	45.0	0.75	0.40	1.10		
31.40	3.08	1.57	441.0	0.81	0.20	0.10		
31.75	3.07	1.59	441.0	0.82	0.19	0.10		
4.86	0.43	0.76	56.9	0.96	0.18	0.31		
2.33	0.52	1.28	39.0	0.68	0.45	1.10		
2.33	0.52	1.28	39.0	0.68	0.45	1.10		
15.94	0.48	0.84	199.0	0.91	0.06	0.11		
4.84	0.77	0.49	61.0	0.91	0.32	0.20		
4.84	0.77	0.49	61.0	0.91	0.32	0.20		
1.94	0.44	1.07	24.5	0.91	0.45	1.10		
1.94	0.44	1.07	24.5	0.91	0.45	1.10		
4.78	1.08	0.36	60.3	0.91	0.45	0.15		
4.78	1.08	0.36	60.3	0.91	0.45	0.15		
4.78	1.08	0.36	60.3	0.91	0.45	0.15		
4.78	1.08	0.36	60.3	0.91	0.45	0.15		
16.50	0.50	0.50	225.2	0.84	0.06	0.06		
16.27	0.50	0.50	225.2	0.82	0.06	0.06		
16.17	0.44	0.49	225.2	0.82	0.05	0.06		
2.89	0.55	0.45	35.0	0.94	0.38	0.31		
9.08	1.39	4.99	159.0	0.65	0.31	1.10		
9.60	1.47	5.28	167.0	0.66	0.31	1.10		
21.98	0.66	0.64	343.1	0.73	0.06	0.06		
21.98	0.66	0.64	343.1	0.73	0.06	0.06		
21.98	0.66	0.64	343.1	0.73	0.06	0.06		
21.98	0.66	0.64	343.1	0.73	0.06	0.06		
29.39	0.88	0.84	458.7	0.73	0.06	0.06		
0.06	0.00	0.00	0.9	0.73	0.06	0.06		
0.06	0.00	0.00	0.9	0.73	0.06	0.06		
0.06	0.00	0.00	0.9	0.73	0.06	0.06		
0.06	0.00	0.00	0.9	0.73	0.06	0.06		
0.06	0.00	0.00	0.9	0.73	0.06	0.06		
0.25	0.01	0.01	3.9	0.73	0.06	0.11		
0.25	0.01	0.01	3.9	0.73	0.06	0.11		
0.25	0.01	0.01	3.9	0.73	0.06	0.11		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	West Virginia	GRANT	NORTH BRANCH POWER STATION	Coal Steam	7537	1A	Scrubber
2020	West Virginia	GRANT	NORTH BRANCH POWER STATION	Coal Steam	7537	1B	Scrubber
2020	West Virginia	GRANT	MT STORM	Coal Steam	3954	1	SCR and Scrubber
2020	West Virginia	GRANT	MT STORM	Coal Steam	3954	2	SCR and Scrubber
2020	West Virginia	GRANT	MT STORM	Coal Steam	3954	3	SCR and Scrubber
2020	West Virginia	HARRISON	HARRISON	Coal Steam	3944	1	SCR and Scrubber
2020	West Virginia	HARRISON	HARRISON	Coal Steam	3944	2	SCR and Scrubber
2020	West Virginia	HARRISON	HARRISON	Coal Steam	3944	3	SCR and Scrubber
2020	West Virginia	KANAWHA	KANAWHA RIVER	Coal Steam	3936	1	SCR and Scrubber
2020	West Virginia	KANAWHA	KANAWHA RIVER	Coal Steam	3936	2	SCR and Scrubber
2020	West Virginia	MARION	Grant Town Power Plant	Coal Steam	10151	GEN1	Scrubber
2020	West Virginia	MARSHALL	KAMMER	Coal Steam	3947	1	SCR and Scrubber
2020	West Virginia	MARSHALL	KAMMER	Coal Steam	3947	2	SCR and Scrubber
2020	West Virginia	MARSHALL	KAMMER	Coal Steam	3947	3	SCR and Scrubber
2020	West Virginia	MARSHALL	MITCHELL	Coal Steam	3948	1	SCR and Scrubber
2020	West Virginia	MARSHALL	MITCHELL	Coal Steam	3948	2	SCR and Scrubber
2020	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	11	SCR and Scrubber
2020	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	21	SCR and Scrubber
2020	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	31	SCR and Scrubber
2020	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	41	SCR and Scrubber
2020	West Virginia	MASON	PHILIP SPORN	Coal Steam	3938	51	SCR and Scrubber
2020	West Virginia	MASON	MOUNTAINEER	Coal Steam	6264	1	SCR and Scrubber
2020	West Virginia	MONONGALIA	FORT MARTIN	Coal Steam	3943	2	Scrubber
2020	West Virginia	MONONGALIA	Morgantown Energy Facility	Coal Steam	10743	GEN1	Scrubber
2020	West Virginia	MONONGALIA	FORT MARTIN	Coal Steam	3943	1	SCR and Scrubber
2020	West Virginia	PLEASANTS	WILLOW ISLAND	Coal Steam	3946	2	SCR and Scrubber
2020	West Virginia	PLEASANTS	PLEASANTS	Coal Steam	6004	1	SCR and Scrubber
2020	West Virginia	PLEASANTS	PLEASANTS	Coal Steam	6004	2	SCR and Scrubber
2020	West Virginia	PRESTON	ALBRIGHT	Coal Steam	3942	3	SCR and Scrubber
2020	West Virginia	PUTNAM	JOHN E AMOS	Coal Steam	3935	1	SCR and Scrubber
2020	West Virginia	PUTNAM	JOHN E AMOS	Coal Steam	3935	2	SCR and Scrubber
2020	West Virginia	PUTNAM	JOHN E AMOS	Coal Steam	3935	3	SCR and Scrubber
2020	West Virginia		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	West Virginia		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	West Virginia		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	West Virginia		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	West Virginia		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	West Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	West Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	West Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	West Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	West Virginia		NEW	Coal Steam			No SCR or Scrubber <=25 MW
2020	Wisconsin	ASHLAND	BAY FRONT	Coal Steam	3982	1	No SCR or Scrubber <=25 MW
2020	Wisconsin	ASHLAND	BAY FRONT	Coal Steam	3982	2	No SCR or Scrubber <=25 MW
2020	Wisconsin	ASHLAND	BAY FRONT	Coal Steam	3982	5	No SCR or Scrubber <=25 MW
2020	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	4	No SCR or Scrubber >25 MW
2020	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	3	No SCR or Scrubber >25 MW
2020	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	5	No SCR or Scrubber >25 MW
2020	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	6	No SCR or Scrubber >25 MW
2020	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	7	No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
2.96	0.44	0.46	37.0	0.91	0.30	0.31		
3.71	0.55	0.58	37.0	0.96	0.30	0.31		
42.55	1.36	5.32	533.0	0.91	0.06	0.25		
42.55	1.36	5.32	533.0	0.91	0.06	0.25		
38.98	1.17	4.87	521.0	0.85	0.06	0.25		
49.93	1.50	2.50	640.0	0.89	0.06	0.10		
49.93	1.50	2.50	640.0	0.89	0.06	0.10		
49.93	1.50	2.50	640.0	0.89	0.06	0.10		
14.20	0.43	0.85	190.9	0.85	0.06	0.12	X	
14.32	0.43	0.86	190.9	0.86	0.06	0.12	X	
8.42	1.26	0.97	84.0	0.96	0.30	0.23		
14.37	0.52	0.86	195.8	0.84	0.07	0.12	X	
14.30	0.52	0.86	195.8	0.83	0.07	0.12	X	
14.02	0.51	0.84	195.8	0.82	0.07	0.12	X	
58.01	2.03	6.20	800.0	0.83	0.07	0.21	X	
57.39	2.01	6.13	800.0	0.82	0.07	0.21	X	
11.19	0.40	0.67	141.9	0.90	0.07	0.12	X	X
11.09	0.39	0.67	141.9	0.89	0.07	0.12	X	X
10.41	0.37	0.62	141.9	0.84	0.07	0.12	X	X
10.63	0.38	0.64	141.9	0.85	0.07	0.12	X	X
31.42	0.72	1.89	430.7	0.83	0.05	0.12	X	X
101.37	3.04	10.96	1300.0	0.89	0.06	0.22	X	X
39.92	4.19	4.99	543.4	0.84	0.21	0.25		
4.80	0.72	0.55	60.0	0.91	0.30	0.23		
39.85	1.20	4.20	540.4	0.84	0.06	0.21		
14.03	0.42	0.84	177.2	0.90	0.06	0.12	X	X
45.07	1.28	4.96	614.0	0.84	0.06	0.22	X	X
44.33	1.40	4.88	614.0	0.82	0.06	0.22	X	X
10.54	0.32	0.63	134.1	0.90	0.06	0.12		
62.38	1.78	6.56	783.2	0.91	0.06	0.21	X	
62.38	1.78	6.56	783.2	0.91	0.06	0.21	X	
101.38	4.02	10.67	1272.7	0.91	0.08	0.21	X	
1.87	0.06	0.05	29.2	0.73	0.06	0.06		
1.87	0.06	0.05	29.2	0.73	0.06	0.06		
1.87	0.06	0.05	29.2	0.73	0.06	0.06		
1.87	0.06	0.05	29.2	0.73	0.06	0.06		
2.50	0.07	0.07	39.0	0.73	0.06	0.06		
0.00	0.00	0.00	0.1	0.73	0.06	0.06		
0.00	0.00	0.00	0.1	0.73	0.06	0.06		
0.00	0.00	0.00	0.1	0.73	0.06	0.06		
0.00	0.00	0.00	0.1	0.73	0.06	0.06		
0.01	0.00	0.00	0.1	0.73	0.06	0.06		
2.70	0.51	1.89	25.0	0.96	0.38	1.40		
2.70	0.45	1.89	25.0	0.96	0.33	1.40		
2.11	0.94	1.48	25.0	0.96	0.89	1.40		
2.11	0.24	0.49	27.0	0.90	0.23	0.46		
2.24	0.26	0.52	28.6	0.90	0.23	0.46		
4.54	0.52	1.05	50.1	0.96	0.23	0.46		
6.02	0.69	1.40	70.8	0.96	0.23	0.46		
6.76	0.93	1.57	86.6	0.89	0.27	0.46		

Year	State Name	County	Plant Name	Plant Type	Plant ID	Unit ID	SCR or Scrubber
2020	Wisconsin	BROWN	PULLIAM	Coal Steam	4072	8	No SCR or Scrubber >25 MW
2020	Wisconsin	BUFFALO	J P MADGETT	Coal Steam	4271	B1	SCR
2020	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B4	No SCR or Scrubber >25 MW
2020	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B5	No SCR or Scrubber >25 MW
2020	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B1	No SCR or Scrubber <=25 MW
2020	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B2	No SCR or Scrubber <=25 MW
2020	Wisconsin	BUFFALO	ALMA	Coal Steam	4140	B3	No SCR or Scrubber <=25 MW
2020	Wisconsin	COLUMBIA	COLUMBIA	Coal Steam	8023	2	No SCR or Scrubber >25 MW
2020	Wisconsin	COLUMBIA	COLUMBIA	Coal Steam	8023	1	No SCR or Scrubber >25 MW
2020	Wisconsin	DANE	BLOUNT STREET	Coal Steam	3992	9	No SCR or Scrubber >25 MW
2020	Wisconsin	DANE	BLOUNT STREET	Coal Steam	3992	8	No SCR or Scrubber >25 MW
2020	Wisconsin	DANE	BLOUNT STREET	Coal Steam	3992	7	No SCR or Scrubber <=25 MW
2020	Wisconsin	DANE	UW Madison Charter St	Coal Steam	54408	1	No SCR or Scrubber <=25 MW
2020	Wisconsin	GRANT	NELSON DEWEY	Coal Steam	4054	1	SCR
2020	Wisconsin	GRANT	NELSON DEWEY	Coal Steam	4054	2	SCR
2020	Wisconsin	KENOSHA	PLEASANT PRAIRIE	Coal Steam	6170	2	SCR and Scrubber
2020	Wisconsin	KENOSHA	PLEASANT PRAIRIE	Coal Steam	6170	1	SCR and Scrubber
2020	Wisconsin	MANITOWOC	MANITOWOC	Coal Steam	4125	8	Scrubber
2020	Wisconsin	MANITOWOC	MANITOWOC	Coal Steam	4125	5	No SCR or Scrubber >25 MW
2020	Wisconsin	MANITOWOC	MANITOWOC	Coal Steam	4125	6	No SCR or Scrubber >25 MW
2020	Wisconsin	MANITOWOC	MANITOWOC	Coal Steam	4125	7	No SCR or Scrubber >25 MW
2020	Wisconsin	MARATHON	WESTON	Coal Steam	4078	1	No SCR or Scrubber >25 MW
2020	Wisconsin	MARATHON	WESTON	Coal Steam	4078	2	No SCR or Scrubber >25 MW
2020	Wisconsin	MARATHON	WESTON	Coal Steam	4078	3	No SCR or Scrubber >25 MW
2020	Wisconsin	MILWAUKEE	SOUTH OAK CREEK	Coal Steam	4041	5	SCR and Scrubber
2020	Wisconsin	MILWAUKEE	SOUTH OAK CREEK	Coal Steam	4041	6	SCR and Scrubber
2020	Wisconsin	MILWAUKEE	SOUTH OAK CREEK	Coal Steam	4041	7	SCR and Scrubber
2020	Wisconsin	MILWAUKEE	SOUTH OAK CREEK	Coal Steam	4041	8	SCR and Scrubber
2020	Wisconsin	MILWAUKEE	VALLEY	Coal Steam	4042	4	No SCR or Scrubber >25 MW
2020	Wisconsin	MILWAUKEE	VALLEY	Coal Steam	4042	1	No SCR or Scrubber >25 MW
2020	Wisconsin	MILWAUKEE	VALLEY	Coal Steam	4042	2	No SCR or Scrubber >25 MW
2020	Wisconsin	MILWAUKEE	VALLEY	Coal Steam	4042	3	No SCR or Scrubber >25 MW
2020	Wisconsin	MILWAUKEE	Milwaukee County	Coal Steam	7549	NA	No SCR or Scrubber <=25 MW
2020	Wisconsin	SHEBOYGAN	EDGEWATER	Coal Steam	4050	4	SCR
2020	Wisconsin	SHEBOYGAN	EDGEWATER	Coal Steam	4050	3	No SCR or Scrubber >25 MW
2020	Wisconsin	SHEBOYGAN	EDGEWATER	Coal Steam	4050	5	No SCR or Scrubber >25 MW
2020	Wisconsin	VERNON	GENOA	Coal Steam	4143	1	SCR
2020	Wisconsin	WINNEBAGO	MENASHA	Coal Steam	4127	B23	No SCR or Scrubber <=25 MW
2020	Wisconsin	WINNEBAGO	MENASHA	Coal Steam	4127	B24	No SCR or Scrubber <=25 MW
2020	Wisconsin		NEW	Coal Steam			No SCR or Scrubber >25 MW
2020	Wisconsin		NEW	Coal Steam			No SCR or Scrubber >25 MW

Total Fuel Use (TBtu)	Total NOx Emission (MTon)	Total SO2 Emission (MTon)	Capacity (MW)	Capacity Factor	NOx Emission Rate	SO2 Emission Rate	Current PM2.5 Nonattainment Area	Projected PM2.5 Nonattainment Area 2020
11.20	1.15	2.48	144.0	0.89	0.20	0.44		
30.53	0.92	8.23	377.0	0.92	0.06	0.54		
4.36	0.78	2.18	57.0	0.87	0.36	1.00		
6.34	1.13	3.17	87.0	0.83	0.36	1.00		
1.98	0.72	1.38	19.7	0.96	0.73	1.40		
1.66	0.61	1.16	19.7	0.96	0.73	1.40		
1.99	0.73	1.40	23.6	0.96	0.73	1.40		
39.83	2.93	14.56	525.0	0.87	0.15	0.73		
41.09	2.47	14.67	525.0	0.89	0.12	0.71		
3.25	0.55	1.63	48.7	0.76	0.34	1.00		
3.49	0.56	1.74	49.3	0.81	0.32	1.00		
2.56	0.78	1.28	24.0	0.96	0.61	1.00		
0.28	0.07	0.14	4.0	0.79	0.53	1.00		
8.21	1.13	4.11	113.0	0.83	0.28	1.00		
7.88	1.09	3.94	113.0	0.80	0.28	1.00		
48.18	1.45	3.85	588.7	0.93	0.06	0.16		
48.27	1.45	2.90	600.0	0.92	0.06	0.12		
1.66	0.28	0.24	22.0	0.86	0.34	0.29		
0.37	0.08	0.26	4.0	0.96	0.45	1.40		
2.06	0.35	1.44	22.0	0.96	0.34	1.40		
1.86	0.32	1.30	22.0	0.96	0.34	1.40		
5.56	0.63	1.68	61.4	0.96	0.23	0.60		
6.20	1.29	1.88	81.6	0.87	0.41	0.60		
25.55	1.60	8.05	334.0	0.87	0.13	0.63		
19.21	0.60	1.58	257.4	0.85	0.06	0.16		
19.77	0.61	1.62	260.4	0.87	0.06	0.16		
21.96	0.68	1.80	293.8	0.85	0.06	0.16		
23.46	0.73	1.92	307.6	0.87	0.06	0.16		
5.11	0.82	2.56	69.0	0.85	0.32	1.00		
5.16	0.83	2.58	69.6	0.85	0.32	1.00		
5.21	0.83	2.61	70.4	0.85	0.32	1.00		
5.25	0.84	2.62	71.0	0.84	0.32	1.00		
0.88	0.20	0.44	11.0	0.91	0.45	1.00		
25.89	0.78	8.48	342.0	0.86	0.06	0.66		
5.39	1.55	1.74	74.0	0.83	0.57	0.65		
30.14	2.71	10.61	402.0	0.86	0.18	0.70		
27.93	0.84	13.97	377.0	0.85	0.06	1.00		
0.79	0.18	1.98	9.4	0.96	0.45	5.00		
1.09	0.25	2.72	13.6	0.91	0.45	5.00		
32.96	0.99	1.15	514.4	0.73	0.06	0.07		
32.96	0.99	1.15	514.4	0.73	0.06	0.07		

Question 2. EPA's CAIR allows a utility to participate in the federally-run SO_2 regional trading program if the State in which the utility is located complies with CAIR by adopting a State implementation plan that requires utilities to turn in acid rain allowances at the rate of 2 allowances for every ton of SO_2 emitted from 2010 through 2014, and 2.86 allowances for every ton emitted in 2015 and later. EPA's recent analysis of the Clean Air Planning Act indicates that SO_2 reductions from utilities beyond those achieved by CAIR would be useful in bringing additional areas into attainment with the $PM_{2.5}$ NAAQS and could be achieved without raising the cost of electricity compared to what is expected under CAIR. I understand that a number of States are considering requiring SO_2 reductions from utilities greater than those that would be required under CAIR.

If a State submits a State implementation plan that requires utilities in that State to turn in acid rain allowances at a higher rate (e.g., 3 allowances for every ton of SO_2 emitted in 2015 and later), will EPA allow that State's utilities to participate in the federally-run SO_2 regional trading program?

If not, why not? Is there some other way that a State could require greater reductions than required by CAIR and still have its utilities participate in the federally-run trading program?

I understand that when States have asked this question in the past, EPA has refused to provide a definitive answer, and instead has suggested to States that they should seek reductions from outside the power sector. Although EPA may have a preference as to how States get the emission reductions necessary to demonstrate attainment, what authority does EPA have for imposing this preference on States?

Why is EPA refusing to give States an answer to this important question when this information could be useful for States as they develop their implementation plans?

Response. States are allowed to require more stringent reductions than CAIR from the power sector. That is a statutory prerogative that CAIR has not altered. We think that CAIR will improve air quality significantly in the affected region and that States should review the CAIR regulatory record thoroughly and other Federal/State rules that are now taking effect and then determine what further controls might be necessary. Several regions of the country are undertaking additional detailed local air quality modeling of CAIR along with other Federal/State actions to address their nonattainment problems. This modeling will include emissions reductions from CAIR as well as from other Federal and State emissions reductions measures. For areas that are still projected to be in nonattainment, this modeling will provide information about what additional sources may need to be controlled. We think it is premature to evaluate what further control options States may choose to consider. States will have a better idea of what they need to do to have effective attainment compliance strategies after air quality modeling and related analyses are completed. Given the nature of regional cap and trade programs like CAIR, a State cannot simply lower its emissions allowance budget and achieve specific reductions from specific facilities. The emission reductions occur whenever and wherever it is most cost-effective to make them.

Looking at the Northeast, EPA's analysis indicates that only one area, in western Pennsylvania, will likely be in nonattainment for the $PM_{2.5}$ NAAQS after 2009, and we believe it is likely that local controls will most effectively rectify this situation.

Question 3. As you know, the Federal Records Act governs the maintenance and disposition of agency records. According to the EPA website, Federal records include "working files, drafts, E-mail messages, data and spreadsheets, computer output, data from test equipment, results of computer modeling, videos, maps, architectural drawings and microfilm." The EPA website asks and answers the following question "What do Freedom of Information Act requests, lawsuits, Congressional inquiries and Federal judicial opinions have in common—The need for impeccable records." Are you aware of the requirements of the Federal Records Act? Please describe the requirements of the Act as applied to your documents, including the disposition schedules for your documents. Have you ever disposed of any records in contravention of the requirements of the Act? Have all your records either been retained or disposed of in accordance with an approved disposition schedule?

Response. I am aware of the requirements of the Federal Records Act. I believe that I have complied with these requirements during my tenure at EPA.

Question 4. EPA stated in its May 12th Federal Register notice finalizing the Clean Air Interstate Rule (or CAIR) that the reductions in ground-level ozone achieved by CAIR could save 500 more people from premature death every year. Yet EPA did not include these benefits in its main analysis for the CAIR Rule. Since then, three new studies were published in the July edition of the journal of Epidemiology which clearly provide strong scientific evidence that the link between ozone and premature mortality is real and significant and additive to the effects of fine particles. At the hearing on November 10th you mentioned that mortality is among the health effects from ozone. However, you did not list that among the health effects mentioned in your written testimony. Does the agency agree that exposure to ozone has been associated with premature mortality? Will the agency include benefits associated with reduction in premature mortality from ozone in rules that relate to ozone from now on?

Response. As I stated at the hearing, "studies also show an association between ozone exposure and mortality." EPA is reviewing the body of literature available on the association between ozone exposure and premature mortality. EPA's second external review draft of the Criteria Document for ozone has concluded that there is evidence that exposure to ozone has been associated with premature mortality. We are exploring ways of appropriately characterizing the premature mortality benefits of reducing ozone and have included preliminary estimates in recent analyses of the Clear Skies legislation as well as in other economic assessments.

Question 5. During the confirmation process for Deputy Administrator Peacock, he was asked the following question:

"According to an Inside EPA article of September 17, 2004, EPA and OMB have been collaborating on an approach which polls a small number of outside experts and asks them to interpret the literature on fine particle health effects and provide an estimated dose-response function. This sounds to me like an odd kind of non-scientific process where a small number of selected people are being asked to do the work traditionally done by EPA scientists. Inside EPA reports that the result of this OMB–EPA collaboration is a lowering of the estimated benefits of pollution control. The professional experts and scientists on the EPA staff were strongly critical of this project, which I also imagine is a very time-consuming and expensive effort. Aren't there enough health effects experts already on the government payroll in EPA who have already interpreted the particulate matter health effects literature, and haven't these EPA experts' interpretations already been subject to outside peer review by the Science Advisory Board and the National Academy of Sciences?"

Mr. Peacock replied that:

"I am not familiar with the expert elicitation approach mentioned, nor any of the details associated with the estimating the benefits of pollution control. If confirmed, I plan to take a close look at this issue and will make any changes necessary."

Has Deputy Administrator Peacock undertaken this process and when is a result expected? If not, would you please respond to the question on behalf of Deputy Administrator Peacock or answer the question on the basis of your own knowledge and information?

Response. The use of formal methods to elicit probabilistic judgments from experts is an important tool in the field of decision analysis. Over the past two decades, there has been an increasing number of studies, funded both by the Federal Government and the private sector, that have used expert judgment techniques to characterize uncertainty in environmental risk analysis and decisionmaking. In the 1980's, EPA's Office of Air Quality Planning and Standards (OAQPS) successfully used expert judgment to characterize uncertainty in the health effects of exposure to lead (Whitfield and Wallsten, 1989) and to ozone (Winkler et al., 1995).

Expert elicitation is a formal, highly structured, and well-documented process whereby expert judgments are obtained through a structured interview. Responses to the elicitation are usually in the form of a probability distribution of outcomes to a quantitative question (i.e., the relationship of $PM_{2.5}$ exposures to mortality are elicited and presented as a mean, median, and estimates of the 5th, 50th, and 95th percentiles of an uncertainty distribution). Formal expert elicitations are usually conducted using independent consultants with expertise in statistics, decision analysis, and probability encoding to structure unbiased questions about uncertain relationships or parameters and who design and implement the process used to obtain probability and other judgments from subject matter experts.

In 2002, the National Academy of Sciences (NAS) released a report on its review of the Agency's methodology for analyzing the health benefits of measures taken to reduce air pollution. In its report, the NRC said that EPA has generally used a reasonable framework for analyzing the health benefits of PM-control measures and recommended that the Agency take a number of steps to improve the characterization of uncertainties in its benefits analysis. EPA has consulted with the Science Advisory Board (SAB) Council[1] and the Office of Management and Budget (OMB)

[1] EPA–SAB–COUNCIL–ADV–99–005, 1999; and SAB–HES, 2004.

to develop and improve the methods used in conducting regulatory impact analyses (RIAs).

The SAB and the NAS support the continued use of empirically-based cohort studies in estimating the benefits of mortality risk reduction associated with air pollution. However, the NAS recommended that (EPA should move the assessment of uncertainties from its ancillary analyses into its primary analyses by conducting probabilistic, multiple-source uncertainty analyses. To do so, EPA will specify probability distributions for major sources of uncertainty based on available data and expert judgment"(NAS, 2002: 14). The NAS further stated that EPA should build on its earlier experience in developing and using expert elicitation by the Office of Air Quality Planning and Standards in the 1980's and by others in fields such as climate change, residential radon cancer risks, and stratospheric ozone depletion. They also recommended that EPA clearly distinguish between data-derived components of an uncertainty assessment and those based on expert opinions.

In response to the NAS recommendations, EPA has developed a comprehensive, integrated strategy for characterizing the impact of uncertainty in key elements of the benefits modeling process (e.g., emissions modeling, air quality modeling, health effects incidence estimation, valuation) on the health impact and monetized benefits estimates that are generated. The strategy includes several different tools and methods such as meta-analysis, expert elicitation, and other statistical approaches.

Part of this strategy was a collaborative effort between the EPA's Office of Air and Radiation (OAR) and the Office of Management and Budget (OMB) on the Clean Air Non-Road Diesel Rule. EPA extended its collaboration with OMB in 2003–2004 to conduct a pilot expert elicitation intended to more fully characterize uncertainty in the effect estimates used to estimate mortality resulting from exposure to PM. The pilot expert elicitation consisted of a series of structured questions, both quantitative and qualitative, about the nature of the $PM_{2.5}$-mortality relationship. The elicitation allowed experts to assimilate multiple sources of information from scientific studies into a single function that expresses their judgment of the concentration-response relationship for mortality. These judgments were expressed in terms of median estimates and associated percentile values of an uncertainty distribution.

The pilot was designed to provide EPA with insights into the design and application of expert elicitation methods to economic benefits analysis, and lay the groundwork for a more comprehensive elicitation. The scope of the pilot was limited to a 1-year effort in which we limited our selection of experts to a total of 5 individuals from lists of nationally recognized experts that participated on two previously established panels of the NAS. The limited scope of the pilot meant that a full expert elicitation process was truncated and many aspects of the uncertainty surrounding the $PM_{2.5}$-mortality relationship could not be quantitatively characterized. Recognizing this, the results of the pilot are only used by EPA for illustrative purposes.

The results of the pilot elicitation were presented in the Clean Air Non-Road Diesel Rule and in the Clean Air Interstate Rule. We presented the primary estimate of benefits based on the Pope et al. (2002) study as recommended by the SAB. Thus, the elicitation did not lower our primary estimate of benefits. We then characterized uncertainty surrounding our primary estimate using a probabilistic range of benefits based on statistical uncertainty as captured by the Pope et al. (2002) epidemiological study. The elicitation results then expanded the range of uncertainties that were expressed quantitatively. Both approaches provided insights into the likelihood of different outcomes and about the state of knowledge regarding the benefits estimates. Both approaches have strengths and weaknesses.

Based on our experience during the pilot, EPA is currently conducting a full-scale expert elicitation that will provide a more robust characterization of the uncertainty in the premature mortality function. The full-scale elicitation includes 12 experts who were nominated by scientists who have published literature on this topic and from a list of individuals provided by the Health Effects Institute.

The time and cost of conducting an expert elicitation will vary depending on the depth of coverage of a particular topic. For the Pilot Elicitation, EPA devoted a team of six technical experts from our staff to the project. We also hired a contractor team that consisted of three people with expertise in conducting elicitations. Pilot testing of the elicitation was conducted with EPA staff in the Office of Research and Development. Expenses for the elicitation are associated with the contractor's efforts to design and conduct the elicitation (including travel expenses to each elicitation interview), compensation to the experts participating in the elicitation, and conducting an external peer review of the elicitation. The Pilot Elicitation was limited in time to a 1-year effort, while the full-scale elicitation will be conducted over a 2½-year period. The total cost of these elicitations has ranged from $200,000 to more than $500,000, for the pilot and full-scale elicitation, respectively.

Question 6. Another question asked of Deputy Administrator Peacock is as follows: " In my view, the Agency's budget and resources for hazardous air pollutants research, regulation development and prevention activities have been much lower than warranted by the statutory requirements in the Clean Air Act. As a result, the Agency has often been significantly behind schedule. EPA has also recently issued unauthorized MACT standards incorporating risk factors inappropriately (for example in the plywood/boiler MACT development) and is also unwisely contemplating, perhaps due to resource constraints, further unauthorized residual risk regulatory actions. Will you commit to reviewing the air toxics program budget and resources and advising this committee of gaps in funding or resources that are needed so that the Agency can promulgate and enforce rules that comport with the statutory requirements of the Clean Air Act?"

Mr. Peacock answered that "I am aware of the ongoing demands and the importance of the air toxics program. If confirmed, I will look into this issue and address any problems if warranted."

Can you tell the status of this review and when this question will be answered?

Response. The Agency faces significant workload and resource challenges to fully implement the air toxics Clean Air Act requirements. In light of these challenges, we have developed a strategy that prioritizes resources to maximize risk reduction. To date, we have completed 16 area source standards, and we are working on developing standards for an additional 32 (four of which are the subject of a consent decree). Once completed, standards for the 32 area source categories will address a significant portion of urban HAP emissions, as outlined in EPA's 1999 Integrated Urban Air Toxics Strategy. We also expect to have completed the first 8 residual risk standards by the end of 2006.

Question 7. Executive Order 12866, which this Administration has said governs its process for reviewing proposed and final regulations, requires OMB to comply with certain requirements to improve the transparency of the regulatory development process, such as disclosing relevant information regarding any communications with outside parties while a regulation is under review by OMB. These requirements are designed in part to ensure that the public knows whether people outside the government are sharing views with OMB about regulations as they are being reviewed, and to provide the public with information about the changes made to a rule as a result of the inter-agency review process.

As you know, the PM Implementation rule, when finalized will provide important guidance to the States for implementing the $PM_{2.5}$ NAAQS. A number of Senators at the November 10th hearing raised concerns regarding the relatively slow pace at which this rule is being developed and released. The official draft of the proposed PM Implementation Rule went to OMB on October 14, 2004, where it remained for nearly a year. However in recent times, EPA has had a practice of sending informal drafts or portions of rules to OMB prior to sending a complete official package for review. Was this proposed rule or portions of this proposed rule shared with OMB prior to the official transmission on October 14, 2004? How and when? Which portions or drafts? Please provide all documents in your possession that relate to the sharing of drafts or portions of the proposal with OMB prior to October 14, 2004.

Response. The recently proposed PM Implementation Rule will help States develop plans to achieve attainment with the health-based $PM_{2.5}$ NAAQS. Although I did not have a substantive role in the preparation or review of this proposal, I have been informed that a draft was sent informally to OMB prior to October 14, 2004. I have no knowledge or records that would show which version or versions were informally provided to OMB. It is likely that the draft that incorporated comments from the internal EPA workgroup was provided to OMB sometime after March 2004. The only documents in my possession that relate to the sharing of drafts or portions of the proposal with OMB prior to October 14, 2004 indicate that the proposal was to be submitted formally to OMB on October 12, 2004.

Question 8. When OMB has a regulatory package that has been submitted "informally," do you know whether it logs the dates and names of individuals outside the government who are involved in any substantive communication with OMB about the regulation as it is required to do once a regulatory package is submitted formally?" Please list each rule that you have worked on at EPA that has been submitted informally to OMB and explain why it was submitted informally. For each such rule, list the individuals or stakeholders outside the government with whom you believe OMB had substantive communications after the regulatory action was shared informally with OMB? Please provide any related documents in your possession.

Response. As I understand it, OMB's policy under Dr. Graham is to log information about contacts with outside parties on all rules that are under informal review.

To my knowledge, all major rules I have worked on at EPA were submitted informally to OMB prior to formal submission. Each of these rulemakings embodied complex technical and legal issues, and informal submission to OMB allows reviewers at OMB and other agencies additional time to read documents, and often leads to an expedited review process.

I do not possess any documents related to OMB communications with individuals or stakeholders outside the government after draft rules were informally submitted to OMB.

Question 9. Section 307(d) of the Clean Air Act, Congress requires EPA to place in the docket all drafts of proposed and final rules (and accompanying documents) sent to OMB for interagency review and "all written comments" on those drafts by other agencies. On a regulatory package that has been sent to OMB for review, if someone from OIRA or another agency, rather than sending comments in writing to EPA, were to dictate changes to draft preamble or regulatory text to EPA staff with the understanding that EPA staff would incorporate these changes, would that be a circumvention of these provisions rather than compliance with them? What is the policy with regard to oral conversations regarding changes to EPA proposals or final rules? Are EPA staff directed that, if they receive changes to text in a Clean Air Act rulemaking package orally rather than in writing, they are to write the comments down, identify who made the comments, and then ensure that they are placed in the docket at the appropriate time? If not, why not?

Response. Section 307(d)(4)(B)(ii) states that "[t]he 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." This requirement of section 307(d) encompasses "written" comments. EPA procedure does not require that conversations during the interagency review be recorded and therefore they are generally not transcribed and submitted to the docket; however any changes to a rule draft reflecting a conversation would be available for review in the docket.

Question 10. In the question referenced above, sent to you as followup to the November 10, 2005 study you were asked: Will EPA conduct such an analysis and put it in the record so that each community will be able to see whether their nonattainment status will be better or worse off under the CAIR equals RACT approach?" In your answer, you stated that: "We have not determined analyses to be performed for the final PM implementation rule." Please indicate whether EPA will or will not conduct such an analysis and the timeline for doing so.

Response. EPA intends to finalize the $PM_{2.5}$ implementation rule later this year. At this time, EPA is considering what analyses will be performed in support of the final rule. EPA has not made a final decision on whether the analysis suggested in the question above will be conducted, but given the rulemaking schedule, we will likely make this decision in April or May.

Please note that EPA has performed analysis of the impact of CAIR and other existing measures on future $PM_{2.5}$ and ozone levels. Links to our most recent projections are included on the "Multi-Pollutant Analyses and Technical Support Documents" web page at http://www.epa.gov/airmarkets/mp/. Also, under the Clean Air Act, States perform local attainment modeling that shows the air quality impact of additional controls they are using to meet the NAAQS. This information also is available to the public.

Question 11. In a previous question sent to you as followup to the November 10, 2005 subcommittee hearing regarding the Implementation of the Existing Particulate Matter and Ozone Air Quality Standards, you were asked a question regarding EPA's position on the "turn in ratio" for acid rain allowances. Specifically you were asked: "If a State submits a State implementation plan that requires utilities in that State to turn in acid rain allowances at a higher rate (e.g., 3 allowances for every ton of SO_2 emitted in 2015 and later), will EPA allow that State's utilities to participate in the federally-run SO_2 regional trading program?" Your answer did not respond to this question or a number of the questions that directly followed this question. Please answer the question above.

Response. In the preamble to the final CAIR (70 FR 25258), we made the following statement, which responds to the question: "EPA will use a Phase II ratio of 2.86-to-1 for all States affected by CAIR who choose to participate in the trading program."

Question 12a. Please also answer the following specific questions that were not answered in your response on the "turn in ratio" issue: If EPA will not allow a higher turn in rate, why not?

Response. EPA has designed and agreed to implement a trading program to obtain the reductions required under CAIR. If individual States were to change basic rules of the program such as the retirement ratio, it would impact the allowance price, changing the cost effectiveness of the program not just for their State but also for other States. EPA has concerns about a change to such a fundamental component of the program for a small number of States given the impact it could have on other States. In addition, a tighter retirement ratio does not guarantee any more emission reductions in the State where it is applied, therefore EPA does not believe it to be the best mechanism to address local nonattainment issues.

Question 12b. Although EPA may have a preference as to how States get the emission reductions necessary to demonstrate attainment, what authority does EPA have for imposing this preference on States?

Response. EPA agrees that States may achieve the emission reductions they need to demonstrate attainment however they wish. One mechanism that States may choose to use is an interstate trading program that EPA has agreed to administer. EPA believes it is very important to use a consistent set of rules in order to have a trading program that achieves its environmental goals and that EPA can successfully implement on a multi-state basis.

Question 12c. Why is EPA refusing to give States an answer to this important question when this information could be useful for States as they develop their implementation plans?

Response. EPA made it clear in the preamble to the final rule that States needed to use a ratio of 2.86-to-1 if they wanted to participate in an EPA-run trading program. Subsequent to finalization of the rule, a number of States have asked EPA to revisit aspects of the rule such as the requirement to use the 2.86-to-1 ratio. EPA has explained its rationale (outlined above in (A.)) and has suggested to States that it would be better to consider alternative mechanisms to achieve emission reductions after they have completed further analysis (such as air quality modeling) to identify more specifically the reductions they need. Many States are currently engaged in such efforts and, in many of these cases, EPA is participating and providing assistance.

Question 13. With regard to "informal" submission to the Office of Management and Budget (OMB) of rules, you were asked to list each rule that you have worked on at EPA that has been submitted informally to OMB. You responded by noting that all of the rules that you have worked on while at EPA were submitted informally to OMB. Please list all of the rules that you have worked on while at EPA.

Response. Enclosed with this document is a list of all rules on which I have had significant input since joining EPA. I have had minor involvement in many more rules than those listed. For example, I reviewed part or all of virtually every signature package involving stationary sources while serving as Counsel to the Assistant Administrator for Air and Radiation. I would be pleased to provide more information if needed.

Question 14. Another question sent to you as followup to the November 10, 2005 hearing related to the Air Toxics program and Deputy Administrator Peacock's commitment to "reviewing the air toxics program budget and resources and advising this committee of gaps in funding or resources that are needed so that the Agency can promulgate and enforce rules that comport with the statutory requirements of the Clean Air Act." Your answer provided a status update of the current air toxics program which did not address specific gaps in funding or resources need to comply with the statutory requirements of the Clean Air Act. Please advise the committee regarding any gaps in funding or resources that prevent EPA from fulfilling its air toxics duties under the Clean Air Act.

Response. The Agency faces significant workload and resource challenges to fully implement the air toxics Clean Air Act requirements. To help ensure we have adequate resources, the President has requested for FY2007 a $2M increase from the FY2006 enacted budget to enhance EPA's capacity to meet air toxics rulemakings under court-ordered deadlines and complete other priority air toxic rulemaking. These resources will be critical for enabling EPA to implement the Agency's program to reduce air toxics.

Question 15. With regard to the Particulate Matter Implementation rule, you were asked as followup to the November 10, 2005 hearing to provide all documents relating to the sharing of drafts or portions of drafts prior to October 12, 2004. Your response indicates that the only responsive documents you have are documents that discuss transmission of the proposal on October 12, 2004. Please provide these documents.

Response. Enclosed with this document is a copy of an e-mail I received on October 12, 2004, together with a hardcopy of the draft rule that was attached in the e-mail. These items are the only documents I have that are responsive to your request.

STATEMENT OF SAM OLENS, CHAIRMAN, ATLANTA REGIONAL COMMISSION ON BEHALF OF THE ATLANTA REGIONAL COMMISSION

Good morning, Mr. Chairman and members of the Committee. I am Sam Olens, Chair of the Atlanta Regional Commission (ARC). I am testifying today on behalf of the ARC. The ARC is the designated Metropolitan Planning Organization (MPO) for 18 counties within the 20+ county Atlanta 8-hour ozone and fine particulate matter nonattainment areas. As such, ARC has primary responsibility under the Clean Air Act for ensuring transportation conformity provisions are met through development of regional transportation plans and programs that support clean and healthy air for all of our region's citizens. I am pleased to have this opportunity to provide our perspectives regarding implementation of new air quality standards in the Atlanta region.

Atlanta has a long history of nonattainment; primarily with the older 1-hour ozone standard and more recently with the revised 8-hour ozone standard and new fine particulate matter standard ($PM_{2.5}$). Over the past 15 years, since Atlanta was first designated as nonattainment under the 1-hour ozone standard, we have made significant progress in improving regional air quality. This resulted in attainment of the 1-hour ozone standard in 2004—something that many people doubted could be achieved in a high-growth region like ours. And the levels of ozone have remained low through 2005 (reference Attachment I—Number of Ozone Violation Days).

Our State air quality agency, the Georgia Environmental Protection Division, was able to put together a regional air quality plan that enabled us to meet the 1-hour ozone standard by 2004 due to the following:

- A better understanding of ozone pollution and emission control measures through improved science;
- Concerted effort in the region to implement effective, innovative pollution control measures; and
- Improved intergovernmental and interagency relationships between the various organizations that have a role in ensuring clean air in our State and in our region.

At the same time, the ARC has maintained a positive transportation conformity status for our transportation plan and program since our 2-year conformity lapse in the late 90s.

These successes have occurred in spite of unprecedented growth, numerous legal challenges, and implementation of new air quality standards and provisions that have greatly impacted our planning process.

Although we have made significant progress, in Atlanta we continue to actively work towards implementation of the new ozone and particulate matter standards. Twenty counties in our region are designated as nonattainment under the 8-hour ozone standard. These same counties, plus a portion of two others, are also designated nonattainment under the $PM_{2.5}$ standard. We continue to deal with a number of significant issues related to air quality planning requirements for both the new air quality standards and the previous 1-hour ozone standard, in particular as they impact transportation conformity.

In Atlanta we continue to deal with the very significant concern regarding the Clean Air Act requirement to implement Federal Reformulated Gasoline (RFG). RFG is a provision of our reclassification to Severe nonattainment status under the 1-hour ozone standard. Technical analysis has shown that this fuel blend would actually contribute to an increase in emissions over our existing Georgia gasoline which is tailored to meet our unique air pollution needs. The ARC, along with our State air quality agency, has requested legislative relief from this requirement (reference Attachment II—Memo: Federal RFG Impact on the Atlanta Area, Attachment III—Resolution by the ARC Requesting Legislative Relief and a Time Extension from Federal RFG Requirements). Although the 1-hour standard has been revoked as of June 15, 2005, and the requirement to implement this fuel blend is currently stayed by the courts, examples such as this create uncertainty in the modeling process, inconsistency in the planning process, and make it very difficult to develop an accurate emissions inventory.

Similarly, we continue to deal with continued, habitual delay in release of rules and guidance documents that direct implementation of new standards. Much of the burden of implementing new standards could be alleviated if we ensured that rulemaking and guidance is provided in a timely manner. The efforts of MPOs and States who are trying to meet statutory deadlines for conformity, attainment, etc. must be recognized. These deadlines are fixed by law, yet dates to receive rules and guidance continually slip months, even years, past promised timeframes. This is unacceptable and needs to be addressed as we continue to implement the new standards. Some specific examples related to rulemaking delay are listed below.

- Transportation conformity is required within 1 year of a nonattainment designation. Transportation conformity guidance related to the revised 8-hour ozone standard was released in July 2004 with conformity determinations required by June 2005. Guidance related to emissions inventory development for $PM_{2.5}$ was released in August 2005 with conformity analyses pending April 2006. While it may appear that this still leaves enough time for areas to complete the conformity determination process, it is not. EPA is not sensitive to the significant time and resources it takes to develop a transportation plan and program, complete a conformity analysis, and have everything reviewed and approved by multiple agencies. Guidance needs to be provided on or before nonattainment status designations to allow areas time to prepare for and implement conformity requirements.
- Attainment plans are due within 3 years of nonattainment designation. For 8-hour ozone, designations were made June 2004. Air quality plans are due by June 2007. Phase II of the 8-hour ozone implementation rule that deals with State Implementation Plan development has been delayed well over a year after nonattainment area designations. This rule directs air quality plan development and is not yet available in final form for State air quality agencies.

I have included in our written submittal some additional detail related to the issues we are dealing with in Atlanta as we transition to these new standards from a transportation conformity perspective (reference Attachment IV—Implementing the New Air Quality Standards in Atlanta, Presentation at the National Association of Regional Councils 38th Annual Conference, June 2004).

There has been a great deal of concern expressed related to implementation of the new ozone and particulate matter standards, in particular that the deadlines to meet the standards are too short and that the Clean Air Act should be amended to provide more time to attain. These concerns become even greater in the context of the current review and potential tightening of the particulate matter standard that is only now at the beginning stages of implementation. The ARC shares many of the concerns, as implementation of new standards will always require a change to our process, additional (and often significant) resource expenditures, and additional complexity to an already complicated transportation planning process. However, while we recognize that there are tough air quality standards in place and that they do have a considerable impact on the planning process, we also acknowledge that these standards are based on good science and health data and are in place for a reason and, as such, need to be addressed in a timely manner. Furthermore, we see many of the issues that we are dealing with as external to the primary issue of attainment deadlines and, as such, can be dealt with within existing law.

In Georgia, we are not hearing from our State air quality agency that attainment deadlines associated with the new standards are a concern. It is, in fact, probably too soon to tell if we will have an issue with meeting attainment deadlines as modeling for these standards has only just begun. If we are hearing anything, it is that we need to address these standards in a timely manner. Atlanta is an area experiencing tremendous growth. With approximately 4 million people living in the region today and an expected 2.3 million more people projected to move to the region in the next 25 years, we are dealing with an incredibly large population that is breathing unhealthy air. Our State air agency understands that nonattainment status has a major impact on growth and economic development. Our unprecedented growth translates to both a larger population being exposed to unhealthy air and significantly increased health and other economic costs for the region. The longer we delay implementation of these health-based standards, the longer we pay these costs.

For the newer ozone and particulate matter standards, the deadlines and mandates we have to plan for and implement are not unreasonable. We are on the right track with our current planning and modeling to develop effective air quality plans and regional pollution controls needed to attain. If we find in this planning that we need more time to attain the standard(s), there are currently provisions in existing law and rules that provide a way for us to do this without threatening transportation planning or funding (e.g., for ozone through reclassification or for particulate matter through the opportunity to add 5 years to the attainment deadline, up to 2015, if the State can prove such an extension is warranted).

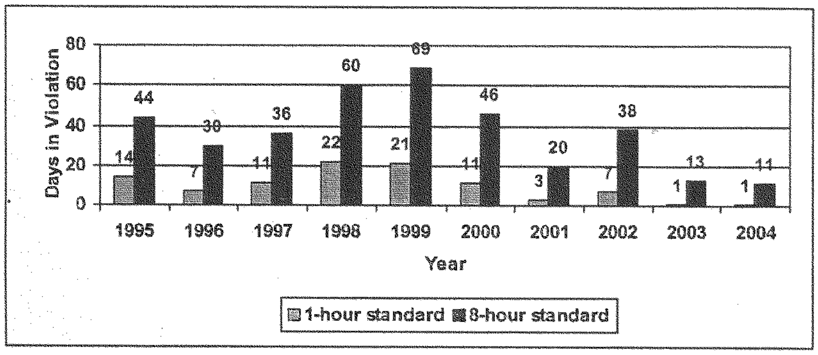
Currently, our concern in Georgia is not our pending attainment deadlines, but ensuring we have the support at the national level to meet these deadlines. This includes providing rules and guidance in a timely manner and, most importantly, ensuring that we maintain the flexibility and control needed to implement pollution control measures that work best for our region. Our region must have the ability to implement innovative, proactive measures to improve our air quality. The more tools and options we have the better. Senator Voinovich has already shown great leadership in this area through introduction of the Diesel Emissions Reduction Act of 2005, a program that will provide substantial funding through national and State-level loans and grants to voluntarily retrofit existing diesel engines to improve air quality and protect public health. This legislation is a perfect example of providing nonattainment areas the opportunity and the flexibility that they need to design programs to fit their own unique needs. This is EXACTLY what we need in an area like Atlanta and where our focus needs to be.

I will end with a few comments related to the potential revision of the fine particulate matter standard. The timing of this review/revision is of particulate concern for Atlanta. Currently the EPA is reviewing the particulate matter standard as required by the Clean Air Act, and will revise the standard if needed based on more current health data. EPA is currently finishing that review and is to recommend action on the standard by end of the year with a final standard proposed by late 2006. If a new fine particulate standard is promulgated by EPA according to this timeline, it will confuse not only the public, but our decisionmakers, and potentially divert staff attention from our current efforts to meet the existing $PM_{2.5}$ standard. While promulgating a new standard is a very time consuming process that will occur over the course of several years, it requires staff attention in the interim and serves as an additional resource drain as we work towards implementing the current standard. I am assured by our State air quality partners, however, that because this process will overlap our present planning effort, that ongoing planning related to our existing fine particulate matter standard will be applicable to any newer, more stringent standard.

In Atlanta we are growing accustomed to the changing face of our region. We have accepted and are actively preparing for the challenges that our projected growth will bring. At the same time, we acknowledge that environmental standards play a very important role in how we deal with this growth. We accept that they have become more stringent over time and may continue to become tighter in the future. While updates to any air quality standard can be complicated and will carry its own challenges, we trust that any update is based on a technically rigorous process that is vetted through a strong scientific review. If indeed standards are strengthened to improve public health, they will be incorporated into the long-range planning processes that are managed by the ARC and the State in a timely manner. To ensure that new standards are implemented efficiently, however, we must have support from our Federal partners in providing us effective guidance and the means by which to meet clean air standards in a manner suitable to our own unique region.

Mr. Chairman and members of the committee, the ARC looks forward to working with you and others as we, collectively, work to implement air quality standards that protect our citizens from poor air quality. Once again, on behalf of the ARC, I thank you for this opportunity to present our views on implementation of the new air quality standards.

Attachment I
Days in Violation of Ozone Standard in Atlanta



ATTACHMENT II

FEDERAL RFG IMPACT ON THE ATLANTA AREA

MEMORANDUM

TO: TCC and TAQC Members

FROM: Tracy Clymer

DATE: September 3, 2003

SUBJECT: Federal RFG Impact on the Atlanta Area

The Atlanta 1-hour nonattainment region will be reclassified from a Serious to a Severe air quality area by late 2003 or early 2004. EPA has made clear that this action is the result of a technicality and does not mean that the Atlanta area's air quality is worsening. Atlanta's air quality has not declined; in fact, it has improved, with ozone monitoring data indicating a significant decline in the number of violations of the 1-hour standard over the last several years.

Once the 1-hour nonattainment area is reclassified, Federal Reformulated Gasoline (Federal RFG) will be required 1 year from the effective date of reclassification. This means that Federal RFG will first be in use for the 2005 ozone season. There are several implications for the Atlanta area concerning the use of Federal RFG:

- Federal RFG is designed to reduce VOC and carbon monoxide emissions
- NOx reductions are more effective for reducing ozone in the Atlanta area
- GA gasoline already in use is tailored to reduce NOx emissions
- Ozone concentrations in Atlanta will likely increase if Federal RFG is implemented

In fact, analysis performed by the Georgia EPD for the 2005 ozone season indicates the following increases in ozone precursors from motor vehicles if the Federal RFG is required:

Modeled Increase in Ozone Precursors due to Federal RFG Implementation, Year 2005

Pollutant	Emission increase, tons per day	Percent Increase over GA Gasoline Emissions, Percent
VOC	0.94	0.65
NOx	11.53	4.1

Fortunately, the Federal RFG problem could be solved if Atlanta is granted a 2-year extension on the requirement to adopt Federal RFG as a Severe area:

- NOx emissions are reduced by lowering the sulfur content of gasoline
- A new Federal low-sulfur gasoline mandate will be fully implemented by 2006
- The low-sulfur requirements will apply to Federal RFG
- Once the low-sulfur requirements are fully implemented, Federal RFG makes sense

Once the Federal mandate is fully implemented the benefits of using the Federal RFG will approximate the benefits of the GA gasoline.

ATTACHMENT III

RESOLUTION BY THE ARC REQUESTING LEGISLATIVE RELIEF AND A TIME EXTENSION FROM FEDERAL RFG REQUIREMENTS

Draft endorsed by TCC on 9/5; to TAQC on 9/11 and Board 9/24

RESOLUTION BY THE ATLANTA REGIONAL COMMISSION REQUESTING LEGISLATIVE RELIEF AND A TIME EXTENSION FROM FEDERAL REFORMULATED GASOLINE (RFG) REQUIREMENTS

WHEREAS, pursuant to the Clean Air Act Amendments of 1990 the 13 county Atlanta region was designated as a "serious" nonattainment area under the one-hour ozone standard; and

WHEREAS, the Atlanta Regional Commission as the Metropolitan Planning Organization for the 10 county Atlanta Region develops transportation plans and programs pursuant to 23 CFR Part 450; and

WHEREAS, the Atlanta Regional Commission performs the necessary technical analysis of plans and programs for the 13 county Atlanta Nonattainment Area as required to demonstrate conformity with motor vehicle emission budgets; and

WHEREAS, in 1999 a Georgia low sulfur fuel was implemented in a 25 county region; and

WHEREAS, in 2003 the Georgia low sulfur fuel was implemented in an expanded 45 county market in support of the one-hour ozone attainment demonstration; and

WHEREAS, the 13 county Atlanta nonattainment area is expected to be reclassified from a "serious" to a "severe" nonattainment status as a result of legal action; and

WHEREAS, as a result of this reclassification, Federal law requires implementation of Federal Reformulated Gasoline within the nonattainment area within one year of reclassification; and

WHEREAS, analysis of Federal Reformulated Gasoline by the Georgia Environmental Protection Division demonstrates that this fuel would cause an increase in 2005 emissions of 0.94 tons per day of VOC and 11.53 tons per day of NOx in the 13 county nonattainment area; and

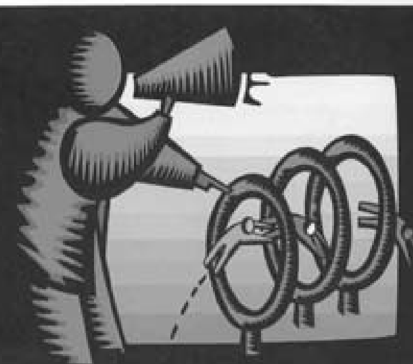
WHEREAS, the Atlanta region is committed to using the cleanest fuels possible to attain national ambient air quality standards in the shortest timeframe possible.

NOW THEREFORE BE IT RESOLVED that the Atlanta Regional Commission requests legislative relief from implementation of Federal Reformulated Gasoline in the 13 county Atlanta nonattainment area until such time that this fuel meets or exceeds Georgia low sulfur fuel requirements in the Atlanta region; and

BE IT FURTHER RESOLVED that the Atlanta Regional Commission supports the Georgia Environmental Protection Division request to Congress that Atlanta be granted an extension on a requirement to adopt Federal Reformulated Gasoline in the Atlanta nonattainment region.

Attachment IV
Implementing the New Air Quality Standards in Atlanta, Presentation at the National Association of Regional Councils 38th Annual Conference, June 2004

See PowerPoint slides

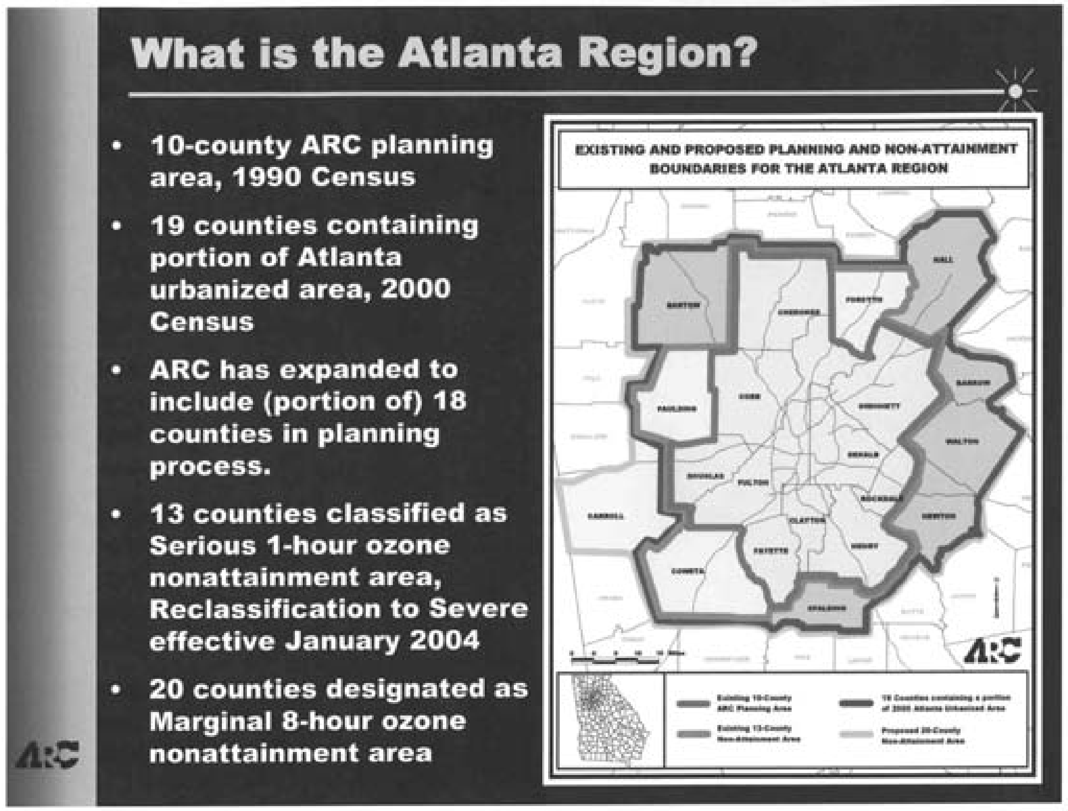


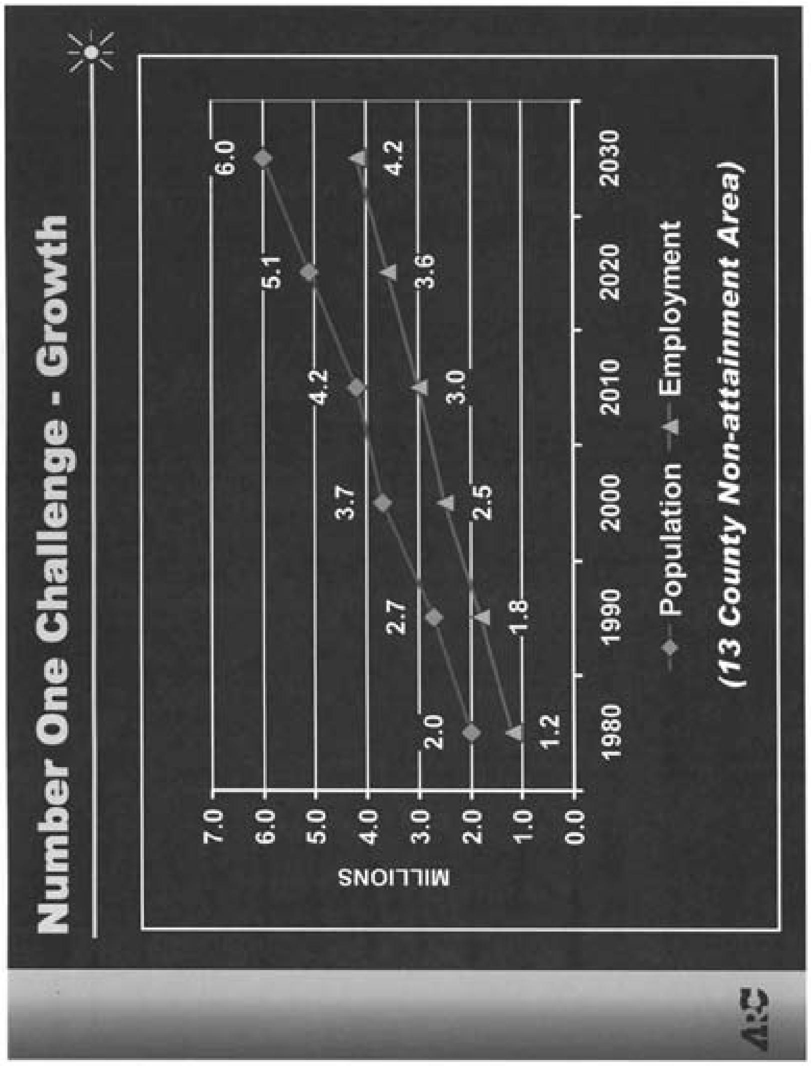
Implementing the New Air Quality Standards in Atlanta

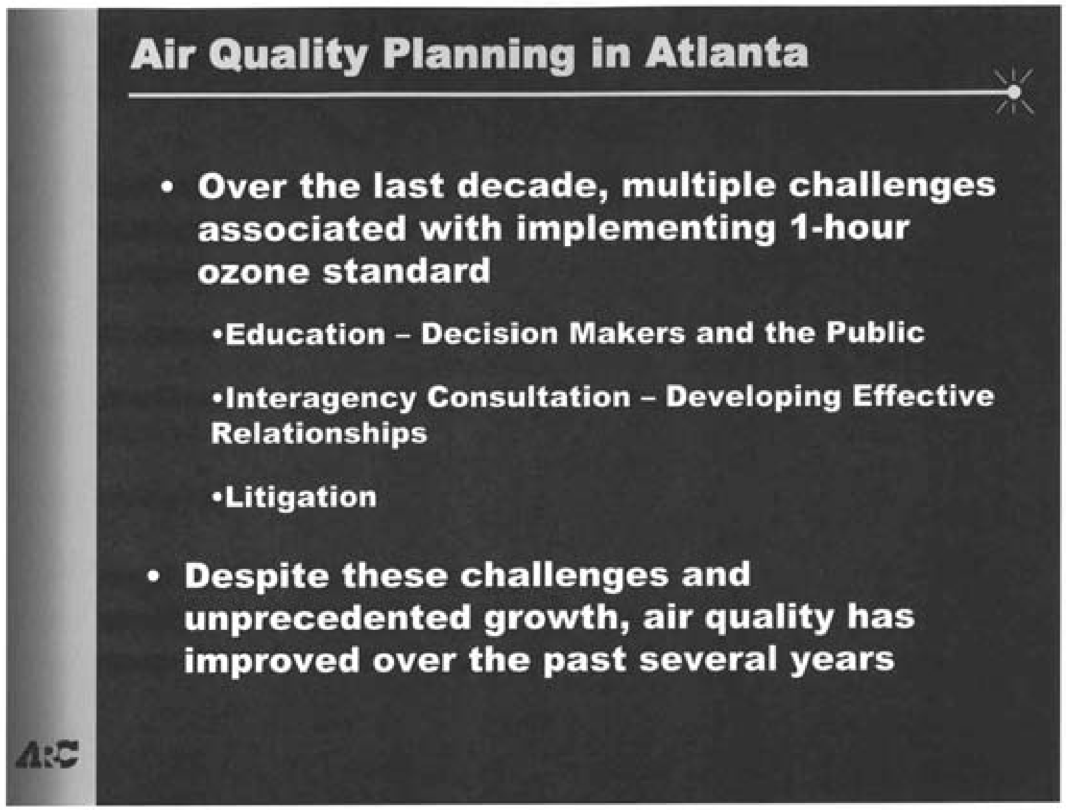
June 28, 2004

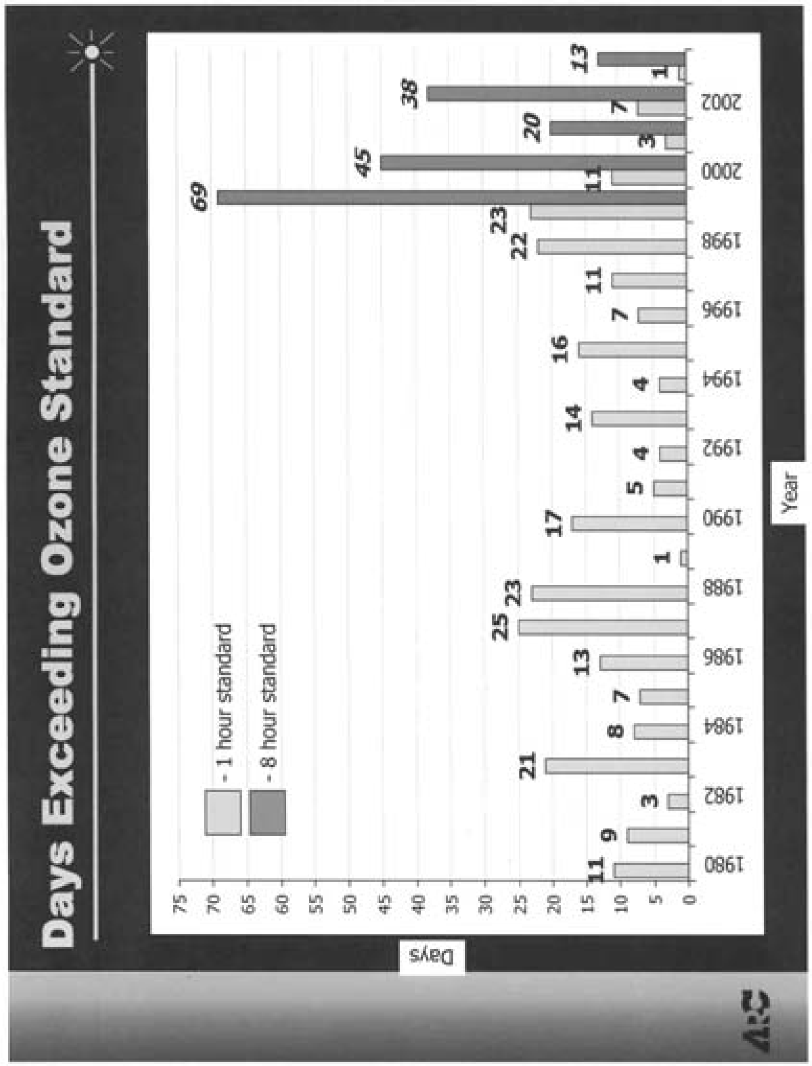
National Association of Regional Councils
38th Annual Conference

ARC


What is the Atlanta Region?
• 10-county ARC planning area, 1990 Census
• 19 counties containing portion of Atlanta urbanized area, 2000 Census
• ARC has expanded to include (portion of) 18 counties in planning process.
• 13 counties classified as Serious 1-hour ozone nonattainment area, Reclassification to Severe effective January 2004
• 20 counties designated as Marginal 8-hour ozone nonattainment area
EXISTING AND PROPOSED PLANNING AND NON-ATTAINMENT BOUNDARIES FOR THE ATLANTA REGION


Number One Challenge - Growth
MILLIONS
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1980
1990
2000
2010
2020
2030
2.0
2.7
3.7
4.2
5.1
6.0
1.2
1.8
2.5
3.0
3.6
4.2
Population
Employment
(13 County Non-attainment Area)
ARC


Air Quality Planning in Atlanta
• Over the last decade, multiple challenges associated with implementing 1-hour ozone standard
•Education – Decision Makers and the Public
•Interagency Consultation – Developing Effective Relationships
•Litigation
• Despite these challenges and unprecedented growth, air quality has improved over the past several years
ARC

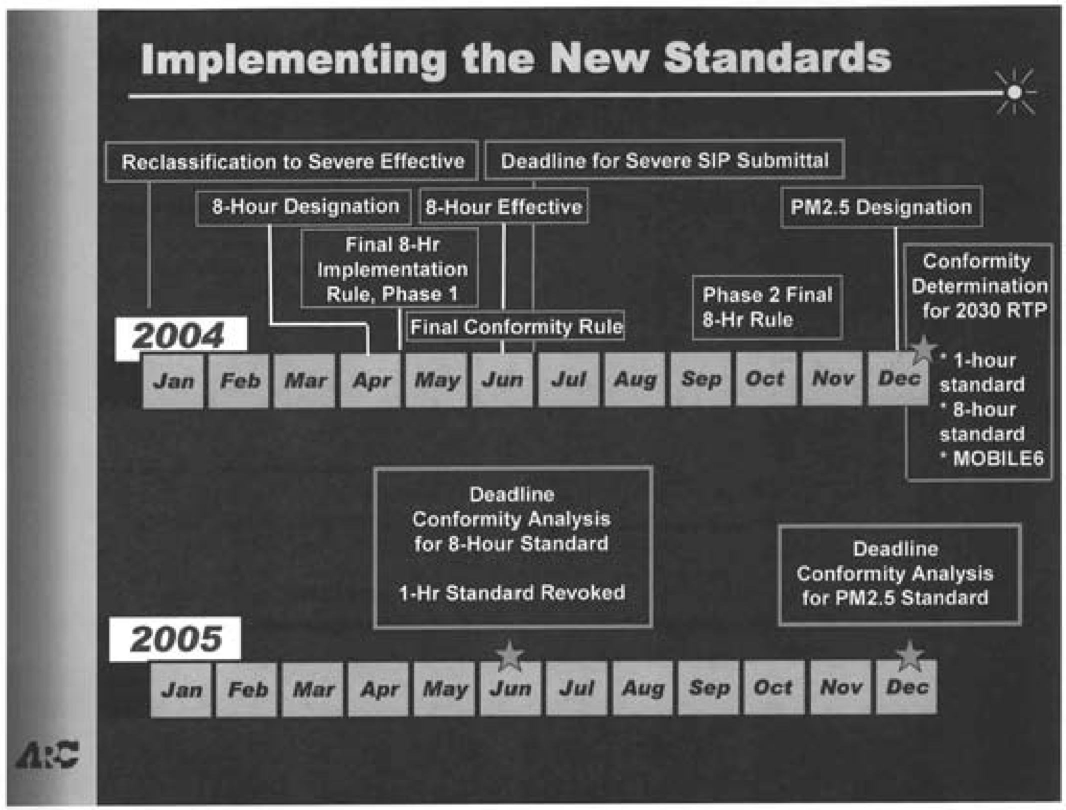

Days Exceeding Ozone Standard
- 1 hour standard
- 8 hour standard
Days
Year
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
11
9
3
21
8
7
13
25
23
1
17
5
4
14
4
16
7
11
22
23
69
11
45
3
20
7
38
1
13

Implementing the New Standards

- **The region is facing:**
  - •Reclassification to Severe under the 1-hour standard,
  - •Implementation of 8-hour ozone standard, and
  - •Implementation of PM2.5 standard
  - ....all at the same time!

- **Immediate milestones:**
  - •Severe SIP Submittal by July 2004
  - •Conformity determination by January 2005
- **Expect the same challenges:**
  - •Education
  - •Interagency Relationships
  - •Litigation

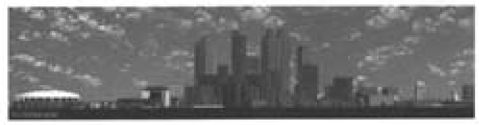
ARC


Implementing the New Standards
Reclassification to Severe Effective
Deadline for Severe SIP Submittal
8-Hour Designation
8-Hour Effective
PM2.5 Designation
Final 8-Hr Implementation Rule, Phase 1
Final Conformity Rule
Phase 2 Final 8-Hr Rule
Conformity Determination for 2030 RTP
* 1-hour standard
* 8-hour standard
* MOBILE6
2004
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Deadline Conformity Analysis for 8-Hour Standard
1-Hr Standard Revoked
Deadline Conformity Analysis for PM2.5 Standard
2005
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
ARC

Major Challenges - Education

- **Education**
  - Air quality is improving, BUT:
    - Classification downgraded under 1-hour standard to Severe
    - Classification upgraded under more stringent 8-hour standard to Marginal
  - Conformity 101 for newly designated areas
  - New standard (PM2.5)

Meeting the Challenge - Education



CLEARING THE AIR

THE FACTS ABOUT AIR QUALITY IN ATLANTA

ARC
Atlanta Regional Commission
www.atlantaregional.com
March 2004

Half-day workshop:

- The Clean Air Act
- Implementing The Act in Atlanta
- Ozone and PM
- Transportation Conformity
- Modeling the Air Quality Impacts of a Transportation Plan
- What is the Region Doing to Improve AQ?
- New Standards-New Rules

All material compiled in notebook for workshop attendees

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Major Challenges – Interagency Relationships

- **Expanded Planning Boundary**
  - •ARC expansion to 18 counties, many of which are more rural in nature
  - •Overcoming negative perception about being part of "Atlanta"
- **Expanded Nonattainment Area**
  - •Two MPO's within 8-hour ozone nonattainment area
  - •One "donut" county outside of either MPO planning boundary, but within nonattainment area
- **Who does what ... and when?**

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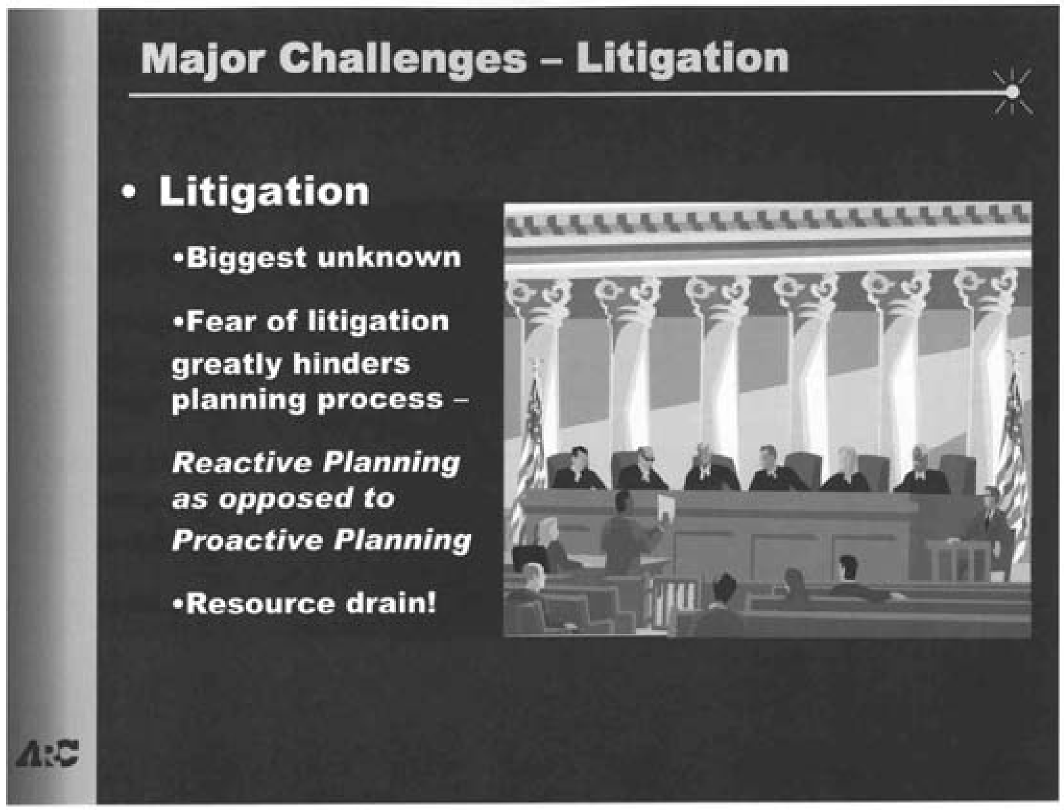
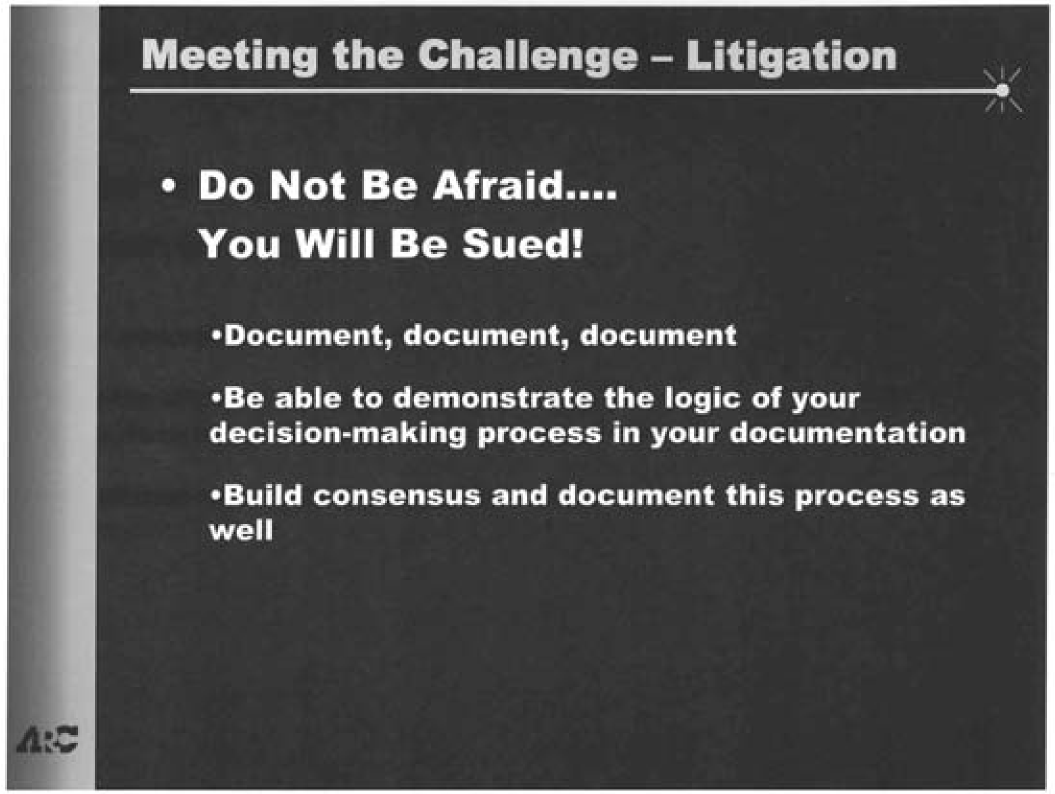
Meeting the Challenge – Interagency Relationships

- **Incorporating new counties**
  - <u>Multiple</u> meetings between ARC and county commission chairs, five affected RDC's,
  - Meetings held over 6-8 month time period
  - ARC adopted expanded planning boundary:
    - *Limited Member (of ARC) for Transportation Planning Purposes Only*
    - Committees and Board membership expanded
- **TransAQ as subgroup of formal Interagency process**
  - ARC, GDOT, EPD, and GRTA
  - Air quality specialists meet to handle technical and detailed policy issues related to conformity
  - Reports back to larger Interagency group
  - Facilitated by ARC

ARC


Major Challenges – Litigation
• Litigation
•Biggest unknown
•Fear of litigation greatly hinders planning process –
Reactive Planning as opposed to Proactive Planning
•Resource drain!
ARC


Meeting the Challenge – Litigation
• Do Not Be Afraid....
You Will Be Sued!
•Document, document, document
•Be able to demonstrate the logic of your decision-making process in your documentation
•Build consensus and document this process as well

Meeting the Challenge - The Big Picture

- **Managing transition to new standard(s) in a way that accounts for major challenges of Education, Interagency Consultation, and Litigation has required:**

  (1) Strategic and proactive planning and outreach to planning partners, stakeholders, etc.

  (2) Proactive technical preparation

  (3) Staff that can navigate sea of new rules and various interpretations of these rules

  (4) Strong support from upper management for an open, inclusive, technically rigorous process

General Findings-Transition to New Standards

1 *Rules not available in a timely manner*

- **Attempting to be proactive, yet planning on "what-if's" and "maybes" until well into RTP/TIP development and conformity analysis.**
  - **What conformity tests will be required?**
  - **What additional resources to plan for?**
- **Serious implications for disrupting plan development.**

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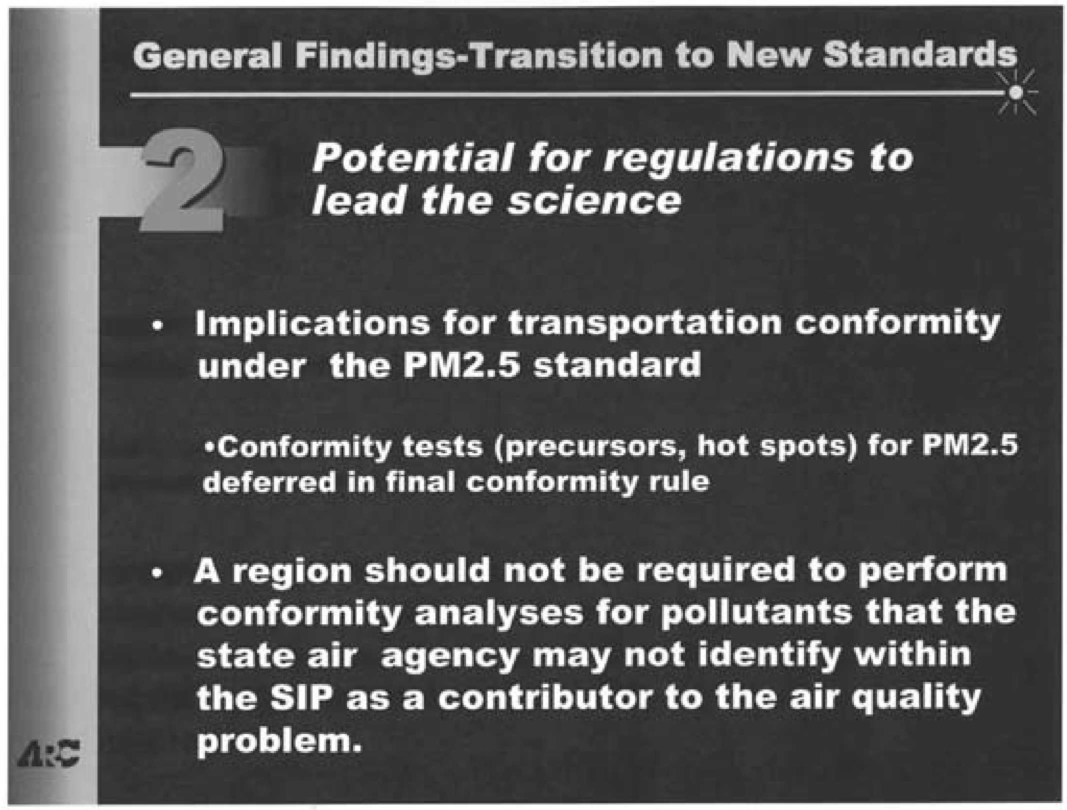
General Findings-Transition to New Standards
2
Potential for regulations to lead the science
• Implications for transportation conformity under the PM2.5 standard
•Conformity tests (precursors, hot spots) for PM2.5 deferred in final conformity rule
• A region should not be required to perform conformity analyses for pollutants that the state air agency may not identify within the SIP as a contributor to the air quality problem.
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General Findings-Transition to New Standards

3 *Significant resource issues as areas transition to new standards*

- **Estimate of additional burden on areas as they implement new standards has been severely underestimated:**
    - Applying conformity requirements to expanded nonattainment area(s)
    - Potential for additional conformity requirements (e.g., PM tests, multiple interim tests)
    - Consultation costs have ignored the range of disciplines and technical expertise required to perform conformity analysis
    - Technical tools must be reevaluated and redeveloped
    - Inevitable litigation and disruption to planning process carries its own cost

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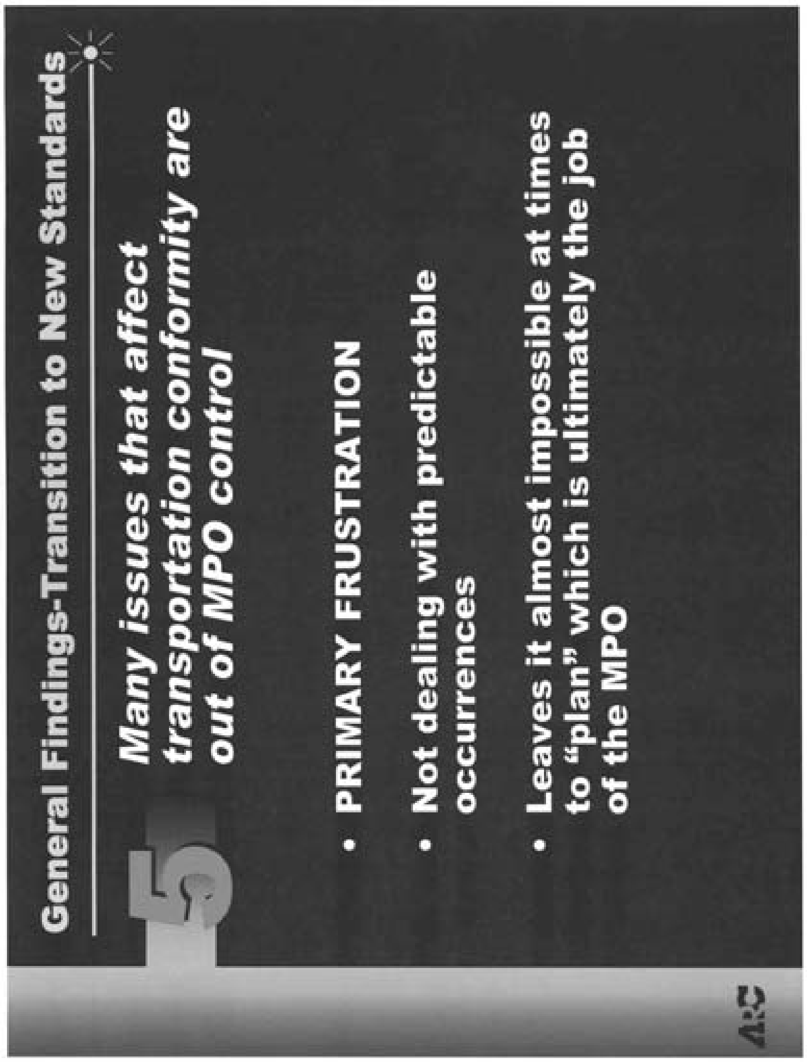
General Findings-Transition to New Standards
4
Legal challenges at the national level are driving the process
• Significant cause of delay in releasing final rules
• No matter how proactive, most issues will be decided by the courts
•Will delay timely implementation of standards
•Will be a significant resource burden
•Complicates public outreach process
•Extremely disruptive to planning process because of unknowns involved
• Has already affected ARC work directly
ARC


General Findings-Transition to New Standards
5
Many issues that affect transportation conformity are out of MPO control
• PRIMARY FRUSTRATION
• Not dealing with predictable occurrences
• Leaves it almost impossible at times to "plan" which is ultimately the job of the MPO
ARC

Thank You

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Transportation Planning Division
Atlanta Regional Commission

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ARC

ATTACHMENT V

MAJOR MOBILE SOURCE POLLUTION CONTROL MEASURES IMPLEMENTED IN ATLANTA

*The controls listed relate only to the mobile source sector and do not reflect the numerous controls applied to stationary and area sources in Atlanta.

While the Atlanta region has gained a national reputation because of its high quality of life and booming economy, we are confronted with numerous transportation and air quality challenges. With rapid growth forecast over the next 25 years, how we address issues of mobility for people and goods and comply with Federal air quality standards is paramount. These issues require deliberate and thoughtful planning if we are to maintain the quality of life that has attracted nearly one million new residents to the Atlanta region in the past decade.

As the regional planning and intergovernmental coordination agency for the metropolitan area, the ARC is responsible for a federally mandated metropolitan transportation planning process that meets all the requirements of the Clean Air. A number of innovative air pollution control measures have been implemented through the transportation planning process as a result of the air quality nonattainment status of the Atlanta region. Despite the significant progress made in improving air quality over the last decade, additional air pollution controls are being developed to ensure continued success in cleaning the air and maintaining a healthy environment for the region's citizens.

A number of significant air pollution controls related to the transportation sector are defined below to give the reader an idea of the great number and type of mobile source emissions control programs that are underway in the region.

1.0 STATE IMPLEMENTATION PLAN CONTROLS

The SIP is a federally enforceable plan that identifies how each State with a designated air quality problem will attain and/or maintain national air quality standards. The SIP estimates the level of air pollutant emissions generated from multiple source categories and defines the necessary reductions needed to attain air quality standards. It establishes a plan (through State regulations and programs) to reduce emissions to necessary levels to achieve clean air.

The SIP must take into account all Federal air pollution control regulations in place or slated for implementation within the time frame of the SIP, and then identify additional State mandated regulation(s) and/or voluntary measures, if needed, to bring the nonattainment area(s) into compliance with air quality standards by the date established in the Clean Air Act. All of the State adopted control measures identified within the SIP become federally enforceable upon Federal approval of the SIP. Below is a listing and brief discussion of the mobile source emission controls (i.e., transportation-related controls) identified in the State Implementation Plan for the 1-hour ozone standard and the associated 10-year Maintenance SIP for the 1-hour ozone standard. This attainment plan ultimately yielded attainment of the 1-hour standard in June 2004.

1.1 NATIONAL REGULATIONS

- Federal vehicle exhaust ("tailpipe") emission standards for passenger vehicles to include[1]:
  - *Tier 1 Standards.*—Emission standards designed to reduce light-duty gas vehicle and light-duty gas truck (i.e., typical passenger vehicles) emissions by 40 percent from standards set in the 1980's. Tier 1 standards were phased in between 1994–1996.
  - *National Low Emission Vehicle (NLEV) Standards.*—Emission standards designed to reduce light-duty gas vehicle and light-duty gas truck NOx emissions beyond Tier 1 standards by approximately 50 percent for light-duty gas vehicles and 17 percent for light-duty gas trucks. NLEV standards were implemented in 2001.
  - *Tier 2 Standards.*—Tier 2 standards will be phased in beginning in 2004 and are designed to reduce emissions from NLEV standards for passenger vehicles by approximately 75 percent - 85 percent and 95 percent for passenger trucks. Tier 2 standards reflect the first time that cars and light trucks are held to the same stringent standards.

[1] For more detailed information related to emission control standards for passenger vehicles see http://www.epa.gov/otaq/ld-hwy.htm.

• Federal vehicle exhaust emission standards for heavy-duty vehicles to include[2]:

- Emission standards designed to significantly lower heavy-duty diesel NOx exhaust levels. This program began in 1998 and ran through 2003.
- Emission standards designed to further reduce heavy-duty diesel NOx exhaust emission levels beyond the 1998 standards by approximately 50 percent. This program began in 2004.
- Beginning in 2006, diesel fuel at the national level will contain 97 percent less sulfur.
- In combination, these programs will reduce emissions of new trucks and buses by up to 95 percent beginning in the year 2007.

1.2 STATE REGULATIONS

Enhanced annual I/M program designed for light—duty gasoline cars and trucks (model years 1975 and newer) within the 13-county 1-hour ozone nonattainment area.[3]

• Low-Sulfur Georgia gasoline for light-duty cars and trucks

- In October of 1999, a two-phase State rule promulgated the use of low sulfur gasoline in the Atlanta region. The first phase, effective summer 1999, decreased the average sulfur concentration of gasoline sold in a 25-county region from approximately 300 ppm to 150 ppm during the summer months, from June 1 through September 15. The second phase, effective September 16, 2003, further reduced the average sulfur concentration to 30 ppm. In addition, phase 2 required that the low sulfur gasoline be sold year round in a 45-county market.
- The reduction in sulfur content enhances the performance of the vehicle's catalytic converter thereby reducing NOx and VOC emissions, which are shown to be more effective at reducing ozone levels in the Atlanta area.

• Partnership for a Smog-Free Georgia

- The Partnership for a Smog-Free Georgia (PSG) is a loosely defined term used to represent all voluntary travel demand management efforts operating in the Atlanta nonattainment region[4]. The PSG program was originally defined as a voluntary ozone action program implemented by EPD to attain voluntary actions from employers, employees, schools and the local citizenry in the Atlanta metro area to improve regional air quality by changing typical commuting and other lifestyle behaviors that contribute to unnecessary ozone production. Over time, this effort has transformed significantly and become part of a larger cooperative effort between business and government entities, public and private sector organizations, that work to coordinate activities to reduce traffic congestion and improve air quality in the metro Atlanta region.

• Stage II gasoline vapor recovery[5] designed to "catch" gasoline vapors (VOC emissions) emitted from the gas tank while fueling a vehicle and redirect the vapors back into the gasoline storage tank.

• Atlantic Station Brownfield Redevelopment

- The Atlantic Steel Mill, located in midtown Atlanta, ceased operations in the late 1990s. The site was determined to be a severe brown-field clean-up site by EPA; clean-up and redevelopment of the site was subsequently approved as a Transportation Control Measure in the SIP. Atlantic Station will be a mixed use development covering approximately 140 acres. It will include residential, office, entertainment, commercial, and recreational uses. The developer will provide transit access throughout the site with connections to the Arts Center MARTA rail station. The thought behind such a development is that reductions in vehicle miles traveled will be observed due to the central location, density of the

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[2] For more detailed information related to emission control standards for heavy-duty vehicles see http://www.epa.gov/otaq/hd-hwy.htm.

[3] Enhanced inspection and maintenance programs are a Federal requirement for Serious and above ozone nonattainment areas, but the State implements the program and decides how the Federal performance standards will be met.

[4] The PSG program has evolved into a program of the Clean Air Campaign which consists of a number of partnering organizations, both public and private (e.g., ARC, GAEPD, GDOT, the Metro Atlanta Chamber of Commerce et al.,), that joined together to improve the Atlanta region's air quality and mobility through coordinated programs designed to change individual and employer behaviors.

[5] Gasoline vapor recovery is a Federal requirement for ozone nonattainment areas, but the State implements the program.

development, and the increased mix of uses on the site that encourage a decreased need to rely on cars as the sole mode of travel.

2.0 REGIONAL TRANSPORTATION PLAN CONTROLS

In the last 10 years, the Atlanta region has gained a million new residents, with ARC forecasts estimating an additional 2.3 million residents in the region by 2030. The ARC's latest long range plan, Mobility 2030, attempts to address the transportation needs in the region through four primary goals and objectives:

(1) Improve accessibility and mobility for all people and goods,

(2) Maintain and improve system performance and preservation,

(3) Protect and improve the environment and the quality of life, and

(4) Increase the safety and security of the transportation system.

In order to achieve the third goal to protect and improve the environment and quality of life, transportation projects that could potentially increase emissions of air pollutants need to be offset or balanced by projects that help to mitigate the increase in emissions. This is not an easy task given the rapid growth that Atlanta has experienced and the foreseen continued growth for the region.

The majority of decreases in on-road motor vehicle emissions will come from significant improvements in engine technology and fuel controls for all vehicle types; if these regulations and innovations were not in place, it would be very difficult for transportation planners to develop plans that meet the stringent requirements of the Clean Air Act considering the tremendous growth the Atlanta region is enjoying. Transportation or travel patterns are founded on many decisions and elements that are largely out of the control of transportation planners, for example: land use, residential growth areas, growth of major employment centers, commercial and private vehicle sales, individual driving habits, and much more. However, good transportation planning can encourage activities that help decrease emissions by encouraging multi-modal travel, accessibility to alternative modes, and more efficient use of the existing transportation infrastructure. Programs that support these activities not only contribute to improvements in air quality, they also contribute to meeting the other transportation goals outlined above.

Following is a discussion of some of the different types of programs that have been implemented and/or encouraged in the long range transportation planning process for the Atlanta region.

2.1 LIVABLE CENTERS INITIATIVE

The Livable Centers Initiative (LCI) promotes quality growth in the region by encouraging greater mobility and livability within existing employment and town centers, thereby using the infrastructure already in place instead of building anew. The program awards $5 million in planning grants over 5 years, with 2004 the final year in the initial LCI program. ARC is currently exploring the best ways to continue and expand this popular program in the future. To be considered for funding, LCI study scopes must demonstrate:

- A local planning public outreach process that promotes the involvement of stakeholders,
- A diversity of mixed-income residential neighborhoods, employment, shopping and recreation choices at the employment and town center level, and
- Access to a range of travel options including transit, roadways, walking, and biking to enable access to multiple destinations within the study area.

2.2 BICYCLE AND PEDESTRIAN NETWORK

Bicycle and pedestrian paths have the potential to improve air quality by providing an alternative mode for a trip other than driving. Bicycling and walking are becoming more realistic modes of transportation for Atlantans as traffic congestion becomes more severe. According to the 2000 Census, 3.5 percent of the U.S. population walked to work while 1.3 percent used other means, such as bicycling. The ARC has been promoting safe, functional and regional bicycle and pedestrian planning since 1973 and continues to update its process to address new needs and trends. The ARC recently adopted the 2002 Regional Bicycle and Pedestrian Walkways Plan which assesses current trends and sets goals, objectives, and performance measures for future bicycle and pedestrian planning.

2.3 TRANSIT

Long range transportation plans emphasize the need for an integrated transit system that ties into the existing MARTA system, HOV lanes, and areas of interest. Future plans for the Atlanta region include an expansive regional transit system that is based primarily on Bus Rapid Transit (BRT). BRT is a rubber-tired system that runs in a dedicated or restricted lane and can be deployed quickly. BRT is planned for every interstate and many of the region's major highways, roadways, and surface streets. This concept is planned to be supported by local buses.

2.4 SMART CORRIDORS

The Smart Corridors concept relies on technology to improve the efficiency of the existing transportation system. In the current long range plan, a network of more than 1,600 miles of roadways will rely on technology to help improve flow. This use of technology is often referred to as Intelligent Transportation Systems or ITS. Specifically, ITS is the application of a combination of technologies to the existing transportation system to save time, lives, and money. The goal is two fold: safer, quicker travel with enhanced mobility and efficient use of existing transportation infrastructure. The benefits of ITS include (but are not limited to) better travel information, quicker emergency response, easier travel, improved traffic flow, fewer traffic jams, improved trucking management, faster goods delivery, and safer travel. All of these benefits work to decrease traffic and gridlock and, thus, improve the quality of the air.

2.5 HIGH OCCUPANCY VEHICLE SYSTEM

The current HOV system in place in the region allows for more efficient transportation of buses (and other forms of mass transit) along with high occupancy vehicles or carpools. Carpools and mass transit encourage individuals to travel more efficiently in order to achieve a quicker, more reliable travel time. At the same time, emissions are reduced to the degree that HOV or mass transit trips replace single occupancy vehicle trips and improve traffic flow. The current long range plan expands the HOV system to every interstate and major highway in the region. In addition to the possible increased efficiency gains, the expansion of the HOV system also provides the potential for some sort of variable or congestion pricing system in the future.

2.6 ULTRA LOW SULFUR DIESEL INITIATIVE

The Georgia Environmental Protection Division has established a multi-state coalition that will provide the metro Atlanta area and possibly adjacent States with ultra-low sulfur diesel (ULSD) earlier than the 2006 federally required phase in date. The goal is to consolidate individual State demands in order to meet the minimum demand required by refineries.

2.7 SIGNAL COORDINATION EFFORT

In 2003, Georgia Governor Sonny Perdue announced an initiative to retime metro Atlanta's traffic signals. This initiative is aimed at improving traffic flow in metro Atlanta; doing so would also decrease vehicle emissions. The Georgia Department of Transportation estimates that there are over 900 signals in the City of Atlanta alone; the effort will focus on the most congested areas first.

STATEMENT OF JAMES D. WERNER, DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Thank you Mr. Chairman and members of the Environment and Public Works' Subcommittee for the opportunity to speak with you today about implementing the National Ambient Air Quality Standards (NAAQS) for fine particles and ground-level ozone. I serve as the Director of the Division of Air and Waste Management for the Delaware Department of Natural Resources and Environmental Control. I previously served in a similar position in the Missouri Department of Natural Resources, and previously in the Environmental Management office of the U.S. Department of Energy and for a private engineering consulting firm. With me today is Ali Mirzakhalili, who is the Administrator of the Air Quality Management Section in our Division. Together we have more than 40 years of professional experience in air pollution control and engineering.

At the outset, let me compliment Senators Voinovich and Carper for their leadership on reducing diesel emissions. The Diesel Emissions Reduction Act (DERA), enacted as part of the Energy bill, can be a vital piece of the puzzle we are gathered here today to solve. We agree with the recent letter by the National Governors' Association, the National Conference of State Legislators, the National Association of Counties and the National League of Cities who expressed the hope that DERA would be funded "at $200 million in [the] Fiscal Year 2007 budget without affecting funding support for other key environmental programs."[1] We are confident that co-operating on such result-oriented solutions will incrementally yield the health and environmental benefits through cleaner air we all seek.

This solution, however is only one of several actions needed to attain the air quality standards on a reasonable schedule, which is an often-deferred goal. Implementation of the existing particulate matter and ozone standards are a minimum vital step for protecting Delaware. We will describe Delaware's situation, our actions to control the air pollutants, and the enormous health benefits possible through implementation of these extraordinarily important public health protection measures.

A. DELAWARE—SMALL, PRECIOUS AND DOWNWIND

President Thomas Jefferson dubbed Delaware "The Diamond State" because we are "small but precious." To which we would add, "downwind." In few other States is the fate of our air quality decided before we wake up in the morning and start turning on lights or driving cars. As you may know, all of Delaware is currently nonattainment for ozone, and our most populous county, New Castle, is nonattainment for fine particulates. This situation should not obscure the fact that we have made enormous progress improving air quality. We have met the one-hour standard for ozone, and substantially reduced SO_2 emissions, especially from the oil refinery in Delaware City, which is one of the few oil refineries with the capability of processing "sour" crude. Thanks largely to a variety of State measures and EPA's Clean Air Interstate Rule (CAIR) rule and implementation we expect further improvements in air quality. Nonetheless, Delaware will continue to fail to meet the ozone standard in 2010, despite our best efforts. Again the main reason is our down wind location. As with many policy questions, where you stand depends on where you sit. We sit at the end of a conveyor belt of air pollution that is loaded in the mid-west and deliver fully cooked on the Atlantic seaboard. Monday's rush hour in St. Louis and Cincinnati can become Wednesday's Ozone alert in Delaware. Part of our routine function as the State air agency is to constantly monitor air quality and provide reports on the Internet. Often, our high pollution levels are measured in southern Delaware where there more acres of soybeans than suburbs, and far more chickens than people or industrial emissions. This observation is no puzzle when you consider upwind sources.

To some, the expected nonattainment is an excuse to kick the can down the road even further. To us, it motivates us to seek other cost-effective controls to control ozone precursors and $PM_{2.5}$ sources. For example, we are pleased to announce Delaware DNREC Secretary John Hughes recently signed a "Start Action Notice" to initiative rulemaking to reduce emissions from Delaware's older, high-emitting coal and residual oil fired powerplants. This "multi-pollutant regulation will control NOx, SOx and mercury. The goal is to adopt a final regulation by fall 2006. Second, we are regulating industrial boilers. Third, we have just completed permitting of a major source of Volatile Organic Compounds (VOC)—the lightering (off-loading of crude oil) of Supertankers coming out of the Atlantic Ocean into the Delaware Bay before they make their way upriver to refiners in Delaware, Pennsylvania and New Jersey. We are proud that this lightering permit was negotiated in a way that results in a win-win by allowing the lightering company to refit their entire fleet with vapor balancing equipment to capture the lost VOCs, which is a product for them and their customers.

We are pursuing this variety of air pollution controls initiatives because we know the benefits outweigh the costs. We also know that national and regional solutions are necessary to help control air quality in Delaware. We persevere nonetheless knowing we cannot ask others to take action we ourselves are not willing to take.

B. AIR POLLUTION COSTS AND BENEFITS: DÉJÀ VU ALL OVER AGAIN

Recent reports[2] of the costs, technical challenges and complexity of meeting Clean Air Act attainment deadlines remind me of the observation of baseball great and philosopher, Yogi Berra, "It's Déjà Vu all over again." Regrettably, much of the analysis behind these claims has not been subject to the normal peer review process for publication in a scientific journal. More substantively, it fails entirely to consider the substantial benefits to controls and examines only the projected costs. Finally,

[1] Joint letter from the National Governors' Association, the National Conference of State Legislators, National Association of Counties and the National League of Cities to President George W. Bush, November 2005.

[2] For example, NERA Economic Consulting for the American Petroleum Institute, Economic Impact of 8-Hour Ozone Attainment Deadlines on Philadelphia Region, September 2005 (released November 7, 2005).

the complexity of the Clean Air Act is nothing new to those of us who live in this world of air pollution control. We are more sympathetic than most to the desire for simplification. The essential management metric for evaluating the performance of any proposal is the impact on air quality. And by this measure, we cannot support trading off paperwork simplification for dirtier air in the real world. We urge the Committee not to confuse "harmonizing" dates with merely "kicking the can down the road" on improving the air quality and achieving the sustainable health benefits known to be possible.

These "cost-only" studies also have had a strong track record of overstating the eventual costs, whether it was the original acid rain studies or the more recent estimates of New Source Review (NSR) compliance. And on this matter we must also disagree: we do not agree that American engineers lack the skill and creativity to develop innovative technologies and methods for achieving air pollution reductions more cost-effectively than merely extrapolating from current trends. We also stand ready to continue to pursue regulatory streamlining that reduce compliance costs (e.g., paperwork and permitting value stream mapping. In short, we are very bullish on American ingenuity, and have been richly rewarded with our confidence in the past.

We are not insensitive to costs. We live in the communities where our neighbors' jobs are on the line. However, can not ignore the substantial and subsequent savings derived from health-related costs from air pollution. So, the question is not whether there are costs, but rather "who bears the costs?" There are clear, though less quantifiable, costs to public health that result from failing to address air pollution problems. In conjunction with our State Division of Public Health, Delaware recently released a report on "the Asthma Burden",[3] which showed a continuing increase in the number of asthma cases. We realize these asthma cases cannot be attributed solely to air pollution. However, it provide local data supporting hundreds of other studies finding a rising tide of asthma that represents a terrible burden on individuals, families, communities, employers and the economy. As you consider various options for potentially adjusting current schedule for compliance, we urge you to consider the other side of the cost formula; the health benefits and subsequent savings derived from controlling air pollution promptly.

We realize there are those who argue that health standards should be subject to strict cost-benefit analysis. We respectfully disagree with this view. However, this is not the questions before us. Over the years, every major, peer-reviewed study has found substantially greater benefits than costs from controlling air pollution, and found greater benefits from air pollution control than virtually any other environmental programs (e.g., oil spill cleanup). Among the most prominent studies was EPA's "unfinished business report, release in 1987, which found air pollution to be among the highest benefit program in EPA.[4] Few years later, under President George H.W. Bush, EPA's Science Advisory Board reviewed this assessment more rigorously and found uncertain in the estimate in many areas, except air pollution control.[5] Criteria Air pollutants were ranked as a high risk by the unfinished Business report in the 1980's. In 1990 the Science Advisory Board report on Reducing Risk ". . . considered to be supported more firmly by the available data than were the rankings for the others." More recently, in 2003, the White House Office of Management and Budget, Office of Information and Regulatory Affairs, under John Graham, found that one of the most clear examples of an environmental program where the benefits clearly outweigh the costs is in the area of air pollution control.

C. ATTAINMENT OF MINIMUM AIR QUALITY STANDARDS—FOLLOWING THE SCIENCE

1. Smog: Ground-level Ozone Can Give Your Lungs a "Sunburn"

Ozone is essentially highly energized oxygen that contains an extra oxygen atom, which results in a respiratory effect sometimes compared to giving your lungs a sunburn. It is not emitted directly but results from "cooking" precursors like NOx and VOCs in sunlight. Ozone is a strong respiratory irritant that affects healthy individuals as well as those with impaired respiratory systems. It can cause respiratory inflammation and reduced lung function, and can reduce human's resistance to colds and pneumonia. Ozone also adversely affects trees, crops (soybeans are a particularly sensitive species), and other vegetation. The national agricultural loss from

[3] The Burden of Asthma in Delaware, Delaware Health & Social Services Division of Public Health, and Department of Natural Resources and Environmental Control, August 2005.

[4] EPA, Unfinished Business: A Comparative Assessment of Environmental Problems, 1987.

[5] EPA, Reducing Risk: Setting Priorities and Strategies for Environmental Protection, SAB–EC–21, September 1990. and Stevens, William K., "What Really Threatens the Environment," New York Times, January 29, 1991.

ozone pollution is estimated to be several billion dollars annually.[6] In the 1970's and 1980's scientists realized it was not only the concentration of ozone exposure but also the duration. Consequently, EPA began the lengthy process of developing a revised standard to replace the old "1-hour" standard, with an "8-hour" standard that reflected this scientific consensus about how ozone affects human lungs. It is a valuable lesson to have read scientific journals and heard academics talk about the chronic exposure phenomenon in the 1970s and need to change the short-term standard, only to be involved with implanting a standard to address this issue in 2005. Consequently, when we learn of EPA's interest in developing a new standard, you must forgive us if we do not reach for our seatbelt.

Like many metropolitan areas, but States, Delaware has been struggling with chronic ozone pollution for years. We have worked diligently for many years to overcome the burden of this pollutant on our citizens. As I mentioned, Delaware's air quality, statewide, does not meet the standards for ozone, and is not expected to meet the ozone standard until beyond 2010. We know better than most the difficulty in explaining to the lay people that we met the standard that we have been pursuing for years, but the rules changed and that we are now violating a new standard. Essentially, our violations do not reflecting worse air quality, but a change in standard. It is easy to criticize this situation as "changing the goal line." It is harder to explain the need to use the best science available. But, given a choice between easy public relations and good science, our choice should be clear.

We have worked with OTC States to evaluate CAIR and found it does not adequately produce the needed emissions to reach attainment of the ozone and PM standards in the northeast and mid-Atlantic States. EPA acknowledged that there would be "residual" nonattainment areas after full implementation of CAIR, but detailed modeling suggests strongly that the difference between EPA's coarse scale modeling and that which was done by the OTC shows a larger gap to fill. In an attempt to derive a solution, a CAIR PLUS alternative was derived and tested. The model rule, corresponding to this alternative, will provide for lower regional EGU emissions through, potentially, a higher NOx and SOx allowance retirement ratio, which will be determined based on SIP quality modeling. The CAIR PLUS concept may also be a cooperative effort with States outside the Ozone Transport Region (OTR), as States beyond the OTR are also concluding that reductions beyond CAIR are needed. Even with this alternative, residual nonattainment areas exist. Considerable area, regional, mobile and local measures, yet to be fully determined, will be needed to finally fill this gap.

Delaware and several other States, have taken steps to meet the 1-hour ozone standard, which are essential to fulfill the 8-hour ozone standard.

Delaware has adopted in coordination with other OTC States that are not specifically identified in the CAA:

1. Architectural and Industrial Maintenance (AIM) Coatings: reduced VOC content of numerous coatings beyond federal requirements.

2. Mobile Equipment: established coating equipment standards to reduce VOC emissions.

3. Gas Cans: required gas cans meet certain performance and permeability standards to reduce VOC emissions.

4. Degreasing: reduced degreaser vapor pressure and instated equipment standards and work practices to reduce VOC emissions.

5. Control of NOx Emissions from Large Boilers: reduced NOx emissions from boilers larger than 100 mmbtu/hr that weren't well controlled through other programs.

6. Anti-Idling: reduced VOC, NOx, SOx, and DPM emissions from heavy duty vehicles by reducing allowable idling time.

7. Open Burning: instated strict open burning ban during the ozone season.

8. Minor NSR: reduced criteria pollutant and air toxic emissions by subjecting new minor stationary sources to top-down BACT requirements.

9. OTC NOx Budget Program: participated in a regional NOx Cap and Trade program to reduce NOx emissions from powerplants (program later replaced by the NOx SIP Call).

10. Adopted several regulations to reinforce EPA-adopted heavy-duty diesel rules.

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[6] (61 FR 65742, December 13, 1996, National Ambient Air Quality Standards for Ozone: Proposed Decision) An examination of the monetized benefits reported above indicates that most of the estimated benefits accrue from attainment of the 8-hour, 0.08 ppm primary standard with a smaller incremental improvement obtained by the addition of a seasonal secondary standard. The projected national approximations for commodity crops and fruits and vegetables suggest that benefits on the order of 1 to more than $2 billion would result from the proposed 8-hour, 0.08 ppm primary standard, alone or in combination with a seasonal secondary standard.

In addition, we have begun work on additional measures, not specifically identified:

1. Stationary Generator Regulation: will reduce criteria pollutant and carbon dioxide emissions from stationary generators.
2. Peaking Units: will reduce peak ozone day NOx emissions from combustion turbines used as electrical peaking units.
3. Refinery Boilers: will reduce NOx emissions from large refinery boilers.
4. Non-Refinery Boilers: will reduce NOx emissions from large non-refinery boilers.
5. Utilities Multi-P: will reduce NOx, SOx, and Hg emissions from Delaware's coal and residual oil fired electric utilities.
6. Lightering: will reduce VOC emissions from crude oil lightering operations in the Delaware Bay.

Finally, we are looking at additional measures where we expect the benefits will exceed the cost of controls. The point is that there is no "silver bullet" solution, but a variety of individual actions that yield success.

2. Soot: Fine Particulates Get in Your Eyes and Deep in Your Lungs

The issue of controlling fine particulates is particularly important to Delaware for a number of reasons. First, and foremost, the air quality in our most populous county is impaired such that it fails to meet the minimum standards for human health protection from the effects of fine particulates. Second, we are keenly aware that we cannot control our "nonattainment" situation alone, without contributions by upwind States. Third, Delaware air is also polluted with toxic chemicals, such as benzene and vinyl chloride[7], which can be absorbed into fine particles with worse health effects than either pollutant alone.

Fine particulate matter, known as $PM_{2.5}$, is a complex and harmful mixture of sulfur, nitrogen, carbon, acids, metals and airborne toxics. When breathed in, $PM_{2.5}$ permanently lodges in lung tissue and causes lung damage and respiratory problems. The fine particles can cross from the lung into the blood stream resulting in inflammation of the cardiac system, a root cause of cardiac disease including heart attack and stroke leading to premature death. $PM_{2.5}$ exposure is also linked to low birth weight, premature birth, chronic airway obstruction, and sudden infant death. In addition to these negative health impacts, fine particulate matter is the primary cause of reduced visibility. New Castle County's air quality does not meet the standards for $PM_{2.5}$, and Kent and Sussex Counties are not much below the standard (currently monitoring about 15 percent). Health studies for fine particles have consistently shown that this pollutant is at the top of the list of concern to health and we understand that EPA's review of the standard, as mandated by the Clean Air Act is suggesting that the existing standard, only finalized in 1997, is not likely to adequately protect public health and should be tightened. This means that we may need to cut emissions even more than we are currently contemplating in order to provide healthful air to our citizens. All activities that we undertake under the standard as it now exists will help us with attainment of a future standard, whenever it is adopted. This work keeps us on the glide path to timely attainment.

Here again we support the adherence to good science. A compounding effect is that the finer particles attract and retain toxic material much more efficiently than larger particles. At one time, air pollution control was done by controlling "total particulates", even though scientists have long known that particulates are not all created equal in terms of their ability to reach deep into lungs. Scientists have found that the standard for PM10 (particulate material with a median diameter of 10 microns or less is not adequately protective of public health. The reason appears to be that the finer particles are inhaled readily into the lungs and essentially are never eliminated (exhaled or brought up by cilia with phlegm). In fact, I serve personally as one of the guinea pigs in graduate school in the laboratory of David Swift who was studying this phenomenon. In the 1980's, we pursued control of particulates smaller than 10 microns. Now we know that particulates smaller than 2.5 microns are the most harmful, not only because of the physical ability to reach and lodge deep into lungs, but also because of the ability to behave partly as a fume and partly as a particle and ability to adsorb toxics.

We understand there is some concern with the prospect of adopting a new scientific standard for human health protection, when the implementation of the previous health standard has barely begun. For environmental engineers and scientists, however, this "pipeline of standards and implementation is part of the normal process of careful development of programs to protect human health, and of the perils

[7] Delaware Division of Public Health and Department of Natural Resources and Environmental Control, Delaware Air Toxics Assessment Study, phase I final report, August 2005.

of litigation that affect these programs. Accordingly, we believe that the new $PM_{2.5}$ should be adopted with all due alacrity so that the public benefits can be realized through detailed implementation.

We fully realize there is a substantial cost to complying with the air pollution control requirements necessary to meet these new standards. We also realize there is a cost to not complying with these standards. These costs are the often ignored benefits of attaining healthful air quality. We realize the real benefits of controlling $PM_{2.5}$ pollution is difficult to quantify and that estimates vary significantly from local epidemiological estimates on one end of the spectrum to the John Locke institute on the other end. We refer you to EPA's estimate of the health benefits, described in the recent implementation rule for fine particulates[8], which, of course could not be published without approval by the White House Office of Management and Budget's Office of Information and Regulatory Affairs:

> ". . . the effects of $PM_{2.5}$ on public health are serious. Estimates suggest that each year tens of thousands of people die prematurely from exposure to $PM_{2.5}$, and many hundreds of thousands more people experience significant respiratory or cardiovascular effects. Even small reductions in $PM_{2.5}$ levels may have substantial health benefits on a population level . . . EPA has estimated that the monetized health benefits of reducing emissions of pollutants that lead to $PM_{2.5}$ formation exceed the costs by 3 to over 30 times."

And the evidence of serious health problems from particulates continues to mount a recent survey of data from 90 urban areas.[9] Again, we do not suggest cost be ignored, but strongly urge that the benefits be weighed as well.

D. CAIR: A GOOD START ON A NATIONAL GOOD NEIGHBOR POLICY

The Clean Air Interstate Rule (CAIR) addresses the age-old problem long known to those of us in the dismal science of air pollution—the wind obeys no State boundaries. Commerce may or may not be interstate requiring a Federal role, but air pollution cries out for a Federal role of an intestate activity—air pollution.

All States, in cooperation with the EPA, have made significant strides in improving the quality of the air, and made equal strides in understanding what forms of control offer the most effective path to success, both from ease of implementation and from an economic view. We have managed to improve air quality by reducing emissions while enjoying increases in GDP and experiencing significant growth in vehicle miles traveled. Since 1970, we have cut emissions that cause soot, smog and acid rain by more than half, even while our Nation's economy has grown by 187 percent—clear evidence that a growing economy and environmental results can, in fact, go hand-in-hand. (Administrator Johnson's speech on August 4, 2005 at Adirondack Council 30th Anniversary, Essex, NY) We need to continue this pattern and bring about healthful air to our citizens as expeditiously as possible.

However, we know more needs to be done. The understanding of the problem brings with it the double-edged sword or recognition of the extent of the problem. Attainment of NAAQS is clearly more vexing than we thought when the earlier Clean Air Acts were passed. Even with the 1990 Amendments, which we hoped would address the ozone problem. Despite concerted effort, the problem persists. We need, and fervently ask for your support to allow us to properly regulate major sources, and most importantly, those sources that are causing our population the most harm. Some issues like intestate transport require a strong Federal role while a variety of individual solutions are more appropriately tailored by States. We have taken action of oil tanker lightering because it is significant source of VOC pollution. We know that some States like Missouri, are legally restricted from controlling pollution more stringently than the Federal Government, and so chronic problems like lead deposition form smelter persists because of EPA inaction on a problem that is restricted to few States. Surely, this is not the time to consider extending attainment deadlines, or hobble States ability to take action. Already action on these standards has been delayed by litigation, that neither cleared the air for better science or law nor for people's health.

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8 Proposed Rule To Implement the Fine Particle National Ambient Air Quality Standards; Proposed Rule 70 Fed. Reg. (210) 65984–66067, November 1, 2005.

9 JAMA study Pope CA 3rd, Burnett RT, Thun MJ, et al., "Lung cancer, cardiopulmonary mortality, and long-term exposure to fine particulate air pollution," Journal of the American Medical Association (JAMA), 2002;287:1132–1141; Brook RD, Brook JR, Urch B, et al. Inhalation of fine particulate air pollution and ozone causes acute arterial vasoconstriction in healthy adults. Circulation. 2002;105:1534–1536; and Ozone and Short-term Mortality in 95 U.S. Urban Communities Bell, M.L., et al. (2004). JAMA 292, p. 2372–2378.

The CAA established a clear path to ameliorate these problems. The Act provides the States with the mechanism to accomplish this task by identifying the culprit areas and making sound estimates of the sources within the areas most likely to be causing the problem. Areas experiencing nonattainment have 3 years to develop State Implementation Plans (SIPS), with the fine particulate matter SIP due in April 2008, and the ozone SIP due in June 2007. The preparation and adoption of past SIPs by each State containing a nonattainment area are grueling tasks, but with very limited exceptions, and only in extraordinary circumstances, have these SIPs not been submitted by the appointed date. A combination of detailed information on the amount of air pollution entering the State, plus information on the amount of pollution generated internally, constitute the cornerstone of the SIP preparation. Knowing how serious the pollution problem is, and what is causing the problem, States can perform complex modeling to determine how much reductions in emissions are necessary to result in an attainment condition. Selection of measures to effect that reduction in emissions, whether locally or regionally, is the final major step in the process. When regional emissions are the major contributor, regional solutions must be developed. One example of this activity is the exemplary work accomplished by the Northeast Ozone Transport Commission (OTC), including all States from Maine to Virginia, working together for a common cause. Using the mechanisms of MOUs and Resolutions, members of the OTC work together to develop control measures that benefit wide areas and not strictly one State.

It is EPA's responsibility and authority to move the preparation of SIPs as expeditiously as possible, and provide adequate support by developing guidance documents, in a timely manner, which states can use to move forward with their work on the SIPs. This mandate, as clearly defined in the Clean Air Act, forms the backbone for the important relationship between the Federal, State and local governments, and allows the entire process to move forward effectively and efficiently. According to the recently proposed fine particle standard implementation Rule, it is the clear responsibility for the Federal Government to promulgate rules on utilities and other large sources, mobile sources, ports, rail operations and others, that produce a universally positive impact on reducing emissions. Subsequent to that activity, and depending on how severe a nonattainment condition remains, State and local areas must fill in the gap with more localized measures that are not preempted by Federal authority.

EPA has taken a universally effective first step with the adoption of the CAIR rule. Unfortunately, it is only a first step. We believe EPA has the authority and a responsibility to do much more. Modeling performed by both State and regional entities have determined that the results not only fall short of producing the needed emission reductions but also are timed in such a manner that little assistance will be gleaned from these actions in time to attain by the required, and I might note, very reasonable schedule, mandated by the Clean Air Act. While EPA has taken an important first step to address transport, we are still concerned that the agency has not done enough. CAIR leaves over 9 million citizens in the North East alone with unhealthy air after its implementation. But even with the most stringent controls we have tested thus far, more than two million citizens remain experiencing unhealthy air. We believe the compliance deadlines are too long, the emissions caps are too weak, and an insufficient number of sources are covered. Additionally, we are troubled that EPA is intending to weaken an important regulatory tool under Section 126 of the Clean Air Act for addressing interstate transport. Now that regions and States recognize the shortcomings of CAIR, work is underway to fill those gaps. The tools necessary to accomplish these objectives must not be taken away from the States. Actions such as preemption of State authority on small engine controls, accomplished by legislated activity and prevention of State's ability to adopt mobile source rules identical to those of California, severely hamper a State's ability to do it's job. Very simply put, if a State is able to pas muster through its normal adoption process, which is both very open and rigorous, there is no reason to prevent a State from doing so.

For example, the northeast and mid-Atlantic States, under the auspices of the OTC, are currently developing a CAIR plus strategy which will result in considerably more emission reductions, from the most appropriate geographical locations, to make a substantial improvement on the original CAIR Rule. The kinds of improvements on the original CAIR framework include nonroad emission control and fuel requirements, and the tightening of the existing controls on stationary sources. Another example of measures directed to improve upon the CAIR framework are being accomplished under the auspices of other regional organizations in the Midwest and the Southeast.

We fully realize there is a substantial cost to complying with the air pollution control requirements necessary to meet these standards. We also realize there is cost to not complying with these standards. These costs are the often ignored benefits of attaining healthful air quality.

At this point in time, our largest and overarching concern is that the Federal Government should refrain from interfering with our ability to adopt more stringent controls than those already promulgated. These measures are ones which we feel can most efficiently and cost-effectively fill the gap between the benefits of CAIR, which again, we concur are substantial, and that amount of reductions in emissions necessary to result in widespread attainment. There have been too many instances when opportunities have been lost when apparently artificial limits have been placed on measures which would affect substantial positive impacts on the wide field of emission reduction possibilities. We ask that you allow the States to do the necessary evaluation and take whatever actions necessary to reach attainment, and not extend timelines and remove any existing authorities that States now have.

Finally, on this day before Veterans Day, I would be remiss if I did not acknowledge the contribution of our men and women of the armed Force who have contributed to our understanding of the science of fine particles and human health. The U.S. Army supported the laboratory of the Dr. David Swift at The Johns Hopkins University, and much of the work at the Inhalation Toxicology Research Laboratory at the Sandia National Laboratory in Albuquerque, New Mexico. Without this critical contribution by this military-sponsored research, our appreciation of the role of fine particles in human health would not be great as it is today. God bless our men and women of the Armed Forces and all their contributions to the people of the United States and people who yearn to breath free everywhere.

Thank you for the opportunity to present these views. I would be happy to answer your questions.

NERA
Economic Consulting

The Economic Impacts of Attaining the 8-Hour Ozone Standard: Philadelphia Case Study

Prepared for:
American Petroleum Institute

Prepared by:
NERA Economic Consulting

September 2005

Executive Summary

Executive Summary

Introduction

- In 2004, EPA designated non-attainment areas and corresponding attainment deadlines for the 8-hour ozone NAAQS
- Separately, EPA has promulgated national regulations that will achieve substantial future emission reductions, including rules for cleaner fuels and engines and the Clean Air Interstate Rule
- The attainment deadlines for a number of areas will occur before a large part of the emissions benefits from these national regulations are achieved
- The deadlines will require significant, and in some cases infeasible, local emission reductions as areas attempt to attain the 8-hour ozone standard without the emissions benefits of the national regulations
- This study investigates the effects of this nonalignment between ozone attainment deadlines and the emission reduction benefits from national regulations for the Philadelphia region ("Philadelphia area"), which consists of 18 counties in Delaware, Maryland, New Jersey, and Pennsylvania, and has an attainment deadline of 2010

Study Premise

- For the Philadelphia area, we estimate the economic impacts of meeting the 2010 ozone attainment deadline and compare them to the estimated impacts of meeting a 2015 deadline, allowing for a realization of significantly more benefits from national regulations
- The impacts differ because the national regulations are projected to achieve substantial emissions benefits in the Philadelphia area between 2010 and 2015
- The 2010 attainment deadline would require many more local controls, and would thus impose substantially greater local costs in the region than would a 2015 attainment deadline
- Information on local emission reductions necessary for attainment was developed through a review by Sierra et al. (2005) of EPA modeling and other modeling associated with CAIR, Clear Skies, and other rules
- Cost and effectiveness information on available local control measures was developed through a review of publicly available studies and databases by Sierra et al. (2005)
- We use a state-of-the-art economic model (REMI) to estimate the economic impacts of the 2010 and 2015 attainment scenarios

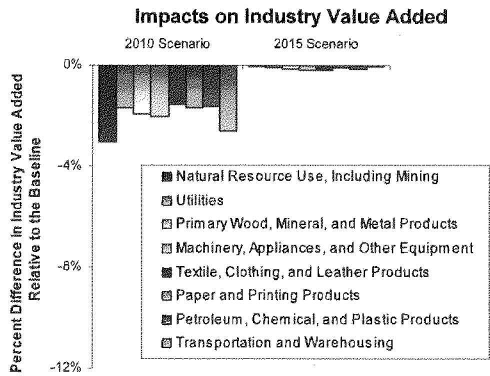
Study Findings

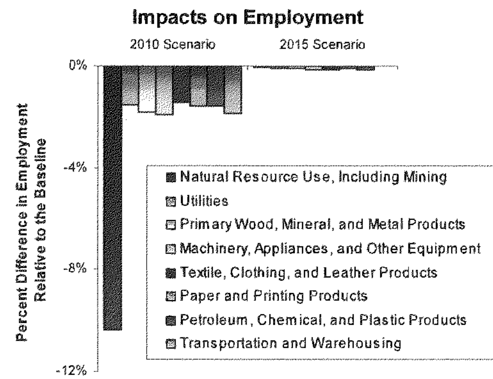
- To attain by 2010, the Philadelphia area would need local NO_x and VOC reductions of about 114,000 tons per year ("TPY") and about 55,000 TPY, respectively
- To attain by 2015, with significant reductions from national regulations, the Philadelphia area would need local NO_x and VOC reductions of about 28,000 TPY and about 2,000 TPY, respectively
- In the 2010 scenario, application of the most stringent available local control measures would achieve NO_x reductions of only 52,000 TPY
  - The 68,000 TPY NO_x reduction short-fall suggests that the 2010 attainment deadline will be infeasible to meet (114,000 TPY - 52,000 TPY = 68,000 TPY short-fall)
  - However, to continue the analysis, we conservatively assume that control costs for the remaining NOx reductions would equal those of the most stringent control measure identified for the 2010 scenario
- Attainment costs associated with the 2010 scenario are estimated at $3.9 billion per year, while the 2015 scenario would cost an estimated $140 million per year (2004 dollars)
- We use the REMI model to estimate the net economic impacts of the 2010 and 2015 attainment scenarios in the Philadelphia area
  - Estimated net economic impacts include positive effects from increased amenity values (due to air quality benefits) and increased local expenditures, as well as negative effects from increased local costs
- Relative to baseline conditions, the 2010 scenario would lead to significantly greater negative economic impacts than the 2015 scenario
  - The negative economic impacts occur in a wide array of industry sectors and occupations

Table ES-1. Economic Impacts in 2020 in the Philadelphia Area under the 2010 and 2015 Attainment Scenarios, Relative to Baseline Conditions

	2010 Scenario	2015 Scenario
Gross Regional Product (2004 dollars)	-$5.5 Billion	-$0.3 Billion
Employment	-42,000 Jobs	-1,000 Jobs
Disposable Income (2004 dollars)	-$4.5 Billion	-$0.1 Billion
Population	-63,000 People	1,000 People
State Tax Revenue (2004 dollars)	-$273 Million	-$6 Million

Figure ES-1. Economic Impacts of 2010 and 2015 Attainment Scenarios on Significantly Impacted Industry Sectors in the Philadelphia Area in 2020





Note: For a particular industry, industry value added is the value of industry output net the value of intermediate goods.

Conclusions

- The Philadelphia area's economy would benefit substantially from a realignment of the ozone attainment deadline to allow for the realization of future emission benefits associated with existing federal regulations
  - Between 2010 and 2015, national regulations are projected to achieve substantial NO_x and VOC reductions in the Philadelphia area
  - Allowing the realization of emission reductions from these national regulations would reduce substantially the negative economic effects associated with the implementation of local control measures
- These results suggest that attainment deadlines should be reconsidered in light of the substantial projected emission reduction benefits from national regulations and the extreme difficulties some regions, such as the Philadelphia area, will likely have in meeting ambient air quality standards by the current deadlines

Table of Contents

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- Sierra Research, Inc. ("Sierra") and E.H. Pechan & Associates ("Pechan") provided data used in the study
- Regional Economic Models, Inc. ("REMI") provided the model used in the study as well as technical assistance
- NERA is grateful to these organizations and individuals for their assistance; responsibility for the report, however, and for any errors or omissions it may contain, rests solely with NERA

Introduction

- Background
- Objectives
- Strategy

Introduction: Background

- In 2004, EPA designated nonattainment areas and corresponding attainment deadlines for the eight-hour ozone NAAQS
  - EPA called for SIPs to be submitted in 2007 that achieve the local NO_x and VOC reductions that will bring individual nonattainment areas into attainment by their specific deadlines
  - For some areas, achieving the necessary emission reductions through local efforts alone would be extremely difficult and would create substantial negative impacts on the respective local economies
- Separately, EPA has promulgated various national regulations that will result in substantial future NO_x and VOC emission reductions in ozone nonattainment areas
  - The designated ozone attainment deadlines for some areas will occur before a large part of the emissions benefits from the national regulations are realized
  - The national regulations will achieve emissions reductions through control strategies that are federally preempted from state controls, or that would be difficult, prohibitively costly, and/or ineffectual to implement at the local level
  - Separate national regulations include, in particular, Tier 2 gasoline, on-road engine standards, ultra-low-sulfur diesel requirements, non-road diesel engine standards and controls on interstate transport of ozone precursors through the CAIR rule
- Because the attainment deadlines for the eight-hour ozone NAAQS were developed independently from the schedules for implementing national regulations, there exists a nonalignment between the timing of the national regulations and the ozone attainment deadlines in some areas

Introduction: Objectives

- This study investigates the effects of the nonalignment between the designated ozone attainment deadlines and the timing of ozone reduction benefits from national regulations
- In particular, we undertake a case study of nonattainment counties in the Philadelphia Consolidated Metropolitan Statistical Area ("Philadelphia area")
  - We estimate the economic impacts of meeting the designated 2010 ozone attainment deadline and compare them to the estimated impacts of meeting a 2015 deadline, allowing for a realization of significantly more benefits from national regulations
  - The economic impacts associated with the 2010 and 2015 attainment scenarios will differ because national regulations are projected to achieve substantial NO_x and VOC reductions in the Philadelphia area between 2010 and 2015
  - The 2010 attainment deadline would require substantially more local controls, and would thus impose substantially greater local costs in the Philadelphia area than would a 2015 attainment deadline

Introduction: Strategy

- A principal driver of the differences between the economic impacts of a 2010 and a 2015 attainment scenario is the emissions benefits that accrue to the Philadelphia area from national emission regulations between 2010 and 2015
- First, we develop estimates of the NO_x and VOC emission reduction benefits that will come from national regulations between 2010 and 2015
- Second, we develop estimates of the different attainment costs associated with a 2010 and a 2015 attainment deadline
- Third, we model the attainment costs to estimate the different economic impacts of a 2010 and a 2015 attainment deadline

Methodology

- Estimating Emission Reduction Targets
- Developing Control Measure Data
- Developing Attainment Scenarios
- Modeling Economic Impacts

Methodology: Estimating Emission Reduction Targets

- The emission reduction targets for a 2010 or 2015 deadline indicate the level of local NO_x and VOC reductions, in tons per year ("TPY"), it would take to bring the Philadelphia area into attainment in the given year
  - Baseline emissions are the NO_x and VOC emissions in a given year without the implementation of any local 8-hour ozone emission control measures
  - Allowable emissions indicate the maximum allowable local NO_x and VOC emissions that will still enable attainment in a given year
  - The difference between baseline emissions and allowable emissions in a given year is the emission reduction target for the Philadelphia area in that year
  - Emission reduction targets will differ for the 2010 and 2015 attainment cases due to different baseline emissions, in particular the realization of emission benefits from existing federal regulations between 2010 and 2015
- Sierra et al. (2005) estimated 2010 allowable NO_X and VOC emissions for the Philadelphia area
  - Local planners have not yet developed public estimates of attainment levels
  - Estimated allowable emissions came from EPA and other modeling associated with CAIR, Clear Skies, and other regulations (EPA 2004 and Reynolds 2004)
  - Estimated allowable emissions accounted for ozone and ozone precursor transport into the Philadelphia area
- We assume that the NO_x and VOC allowable emissions in 2015 would be the same as those estimated for 2010
  - Because the CAIR rule will reduce ozone and ozone precursor transport into the Philadelphia area between 2010 and 2015, the allowable local NO_x and VOC emissions could be higher in 2015 than we have assumed
  - Therefore, our assumptions for 2015 allowable emissions may lead to overstated estimates of the costs and economic impacts associated with the 2015 attainment case
  - In addition, it follows that the difference in costs and economic impacts between the 2010 attainment case and the 2015 attainment case may be understated

Methodology: Estimating Emission Reduction Targets (cont.)

- Sierra et al. (2005) provided projected baseline NO_x and VOC emissions for the Philadelphia area in 2010 and 2015
  - Baseline emissions account for economic growth and reductions expected from all on-the-books local and federal regulations, including existing local commitments to meet the 1-hour ozone NAAQS and federal programs to reduce mobile source emissions
  - Projected 2010 emissions accounted for CAIR NO_X caps
  - Projected 2015 NO_X emissions were adjusted to account for CAIR by assuming that NO_X emissions from utilities would decrease between 2010 and 2015 by the same factor as the CAIR NO_X cap
    - + The planned NO_X cap will decrease by about 16.7 percent between 2010 and 2015, from about 1.50 million tons to about 1.25 million tons (EPA 2005)
- Using the data on allowable emissions and projected baseline emissions from Sierra et al. (2005), we calculated estimated 2010 and 2015 NO_x and VOC emissions reduction targets for the Philadelphia area
  - To attain in a given year, the Philadelphia area would need to meet both the NO_x and VOC emission reduction targets
  - The emission reduction targets are the amounts of local NO_x and VOC emission reductions required above and beyond existing and planned state and federal control measures

Methodology: Developing Control Measure Data

- Sierra et al. (2005) identified a wide range of NO_x and VOC control measures that would be available in 2010 in the Philadelphia area
  - Identified measures included only options that could be implemented by 2010 and that are not already implemented or planned for implementation
  - Each measure was associated with a specific emission source category, generally organized according to SCC Codes
  - Some measures, if they applied to the same source category, were mutually exclusive; identified control measures included indications of what measures, in a single source category, could be combined
- Sierra et al. (2005) provided cost-effectiveness estimates for each identified control measure
  - Information for each measure included the total achievable reductions available from the measure and the cost per ton of the reductions, amortized over the technology's lifetime
  - The amortized cost of each measure represents the cost that would be incurred in each year throughout the technology's lifetime

Methodology: Developing Attainment Scenarios

- Using the cost-effectiveness data on identified control measures, we develop 2010 and 2015 Attainment Scenarios for the Philadelphia area
  - The 2010 and 2015 Scenarios identify sets of local control measures, and associated costs, that satisfy the estimated 2010 and 2015 emission reduction targets, respectively, for the Philadelphia area
  - For each Attainment Scenario, we choose control measures so that the emission reduction targets are met in the most cost-effective way possible
- For the 2010 Attainment Scenario, even assuming the most stringent control measures available, there were not sufficient emission reductions to reach attainment
  - The available control measures cannot provide enough emissions reductions to satisfy the 2010 emission reduction target
  - The Philadelphia area would need substantial reductions from unidentified control measures in order to attain in 2010
  - In order to model a 2010 Attainment Scenario, we develop conservative assumptions about the costs of unidentified emissions reductions
  - The section on the the Philadelphia area case study provides additional details about our treatment of unidentified emissions reductions

Methodology: Developing Attainment Scenarios (cont.)

- To develop a 2015 Attainment Scenario, we use the same suites of identified NO_x and VOC control measures that would be available in 2010
  - Because the 2015 Scenario should not include any control measures that might be implemented independently between 2010 and 2015, we modify the suites of measures that would be available in 2015
    - We assume that the availability of NO_X reductions from utilities would decrease between 2010 and 2015, due to the tightening of CAIR NO_X caps
    - We do not include measures that target on-road and non-road mobile sources, because federal programs are projected to achieve substantial VOC and NO_X reductions from these sources between 2010 and 2015
  - To develop the 2015 Scenario, we choose the available control measures that will satisfy the estimated emission reduction targets in the most cost-effective way possible
  - We assume that local controls in the 2015 Attainment Scenario will be implemented in the same timeframe as the local controls in the 2010 Attainment Scenario
    - Because the 2010 and 2015 Scenarios have the same timeframe for implementation of local controls, our assumption allows us to readily compare the impacts of the two Scenarios
    - Though local control measures will be implemented by 2010 under the 2015 Scenario, the 2015 Scenario will only bring the Philadelphia area into attainment in 2015, when projected baseline emissions are lower

Methodology: Modeling Economic Impacts

- We use a Regional Economic Modeling, Inc. (REMI) model to estimate the economic impacts of the 2010 and 2015 Attainment Scenarios
  - REMI designs and builds state-of-the-art dynamic economic impact models that have been used widely for policy analysis
  - We use a REMI model to estimate the impacts of the Attainment Scenarios on gross regional product ("GRP"), employment, and income in the Philadelphia area from 2010 through 2020
- The 2010 and 2015 Attainment Scenarios include control measures that would impose direct costs on a variety of participants in the regional economy
  - Local industries would bear increased production costs associated with the installation or use of emission control technologies and strategies
  - Local taxpayers would face increased taxes associated with increased local government expenditures on emission control programs
  - The local cost of living would rise due to regulations on consumer products
- The 2010 and 2015 Attainment Scenarios would also lead to direct benefits from increased local expenditures and improved air quality
  - Some businesses would increase their spending in the local economy as they implement the identified control measures
  - Emission reductions would yield amenity value improvements in the local region
- The REMI model captures the direct impacts associated with the 2010 and 2015 Attainment Scenarios as well as the secondary indirect and multiplier effects that result as the direct effects work their way through the economy

Methodology: Modeling Economic Impacts (cont.)

- The 2010 and 2015 Attainment Scenarios would increase production costs for local industries
  - Many control measures require that local industries install new pollution control devices or alter industrial processes and would thus impose direct costs on local industries
  - We assigned direct costs to local industries to specific REMI industry sectors by mapping each relevant measure's emissions category onto a REMI sector
  - In some cases, a single control measure would impact multiple REMI sectors
    - Where possible, we distribute the costs according to the sectors' relative emissions
    - Where necessary, we further distribute the costs according to the sectors' relative contributions to the regional economy
  - We input the amortized direct costs to local industries into the REMI variable "Production costs (amount)" for the appropriate sectors and years

Methodology: Modeling Economic Impacts (cont.)

- The 2010 and 2015 Attainment Scenarios would increase the cost of living in the local region
  - Some control measures would regulate consumer products and lead to higher prices
  - We input the amortized direct costs to consumers into the REMI variable "Consumer price (amount)" for the appropriate categories of consumer goods and the appropriate years
- The 2010 and 2015 Attainment Scenarios would increase taxes paid by local taxpayers
  - Some control measures would require increased government spending, which are assumed to be financed by increased local taxes, thus imposing direct costs on local taxpayers
  - We input the amortized direct increases in government spending into the REMI variable "Personal Taxes – Applicable Personal Income (equivalent dollar amount)" in the appropriate years

Methodology: Modeling Economic Impacts (cont.)

- The 2010 and 2015 Attainment Scenarios would increase local expenditures
  - The costs of control measures would lead to additional expenditures by producers and consumers in the local economy
  - Although some of the expenditures would leave the region, some would remain local
  - We differentiate control measures that would require product installation and O&M labor from those that would would not
  - From the cost-effectiveness information provided by Sierra et al. (2005), we infer what portions of the amortized costs of relevant control measures would go toward upfront costs and what portions would go toward O&M labor
  - We assume that one third of all upfront capital costs would re-enter the local economy as local expenditures (discussions with Khan 2005)
    - Because both Attainment Scenarios would implement control measures by 2010, we assume that upfront capital expenditures would be spread evenly over the period from 2008 through 2010
  - We assume that all costs associated with O&M labor would re-enter the local economy as local expenditures
  - We assume that none of the expenditures associated with control measures that do not involve any capital or O&M labor costs would re-enter the local economy as local expenditures
  - We input increased local expenditures into the REMI variable "Industry Demand -- Construction (amount)" for the appropriate years

Methodology: Modeling Economic Impacts (cont.)

- The 2010 and 2015 Attainment Scenarios would increase local amenity values
  - From OMB documentation, we obtain OIRA estimates of the dollar value per ton of national NO_x and VOC reductions (OMB 2004)
  - Using the midpoint of the range provided in OMB documentation, we estimate the amenity value of a reduction of one ton of NO_x per year at $2,926 (2004 dollars)
  - Using the midpoint of the range provided in OMB documentation, we estimate the amenity value of a reduction of one ton of VOC per year at $1,646 (2004 dollars)
  - We multiply the amenity values of NO_x and VOC reductions by the total annual tons of reductions and input the results into the REMI variable "Non-Pecuniary Amenity Value (amount)" for the appropriate years
  - We assume that the increased amenity values from each Attainment Scenario would last throughout our period of study
  - The amenity value increases modeled in this study reflect rough approximations of the values of NO_x and VOC reductions in the Philadelphia area
    - The amenity value increases provide a useful measure of the differences in air quality benefits between the Attainment Scenarios
    - The amenity value estimates do not represent the results of rigorous benefit analysis for the Philadelphia area

Methodology: Modeling Economic Impacts (cont.)

- We present the economic impacts of the 2010 and 2015 Attainment Scenarios as differences from baseline economic conditions
- The REMI model includes baseline projections for a multitude of economic variables and outputs
  - Inputs enter REMI as modifications to the baseline values of relevant economic variables
  - REMI estimates the effects of inputs as impacts on other economic variables and outputs relative to the baseline
  - Baseline values in REMI are tailored to the individually modeled regions and incorporate projected economic growth
- REMI baseline projections for state tax revenue outputs require calibration
  - We develop projected baseline state tax revenues through 2020 based on a review of states' most recent budgetary plans
    - We assume that the tax revenue growth rate for each state will remain constant after the last year presented in that state's fiscal documents
  - We use population counts from the 2000 Census as weights to estimate each county's contribution to the projected baseline revenues (Census Bureau 2005)
- All dollar values presented in this report are 2004 dollar values

Case Study – Philadelphia

- Composition of Region
- Emission Reduction Targets
- Emission Reductions and Costs
- Economic Impacts

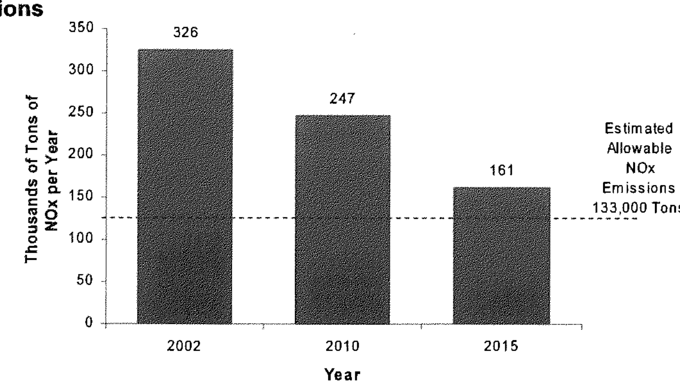
Case Study – Philadelphia: Composition of Region

- The Philadelphia region ("Philadelphia area") studied consists of nonattainment counties in four states, as characterized by EPA
  - Delaware counties
    - Kent, New Castle, Sussex
  - Maryland counties
    - Cecil
  - New Jersey counties
    - Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, Ocean, Salem
  - Pennsylvania counties
    - Bucks, Chester, Delaware, Montgomery, Philadelphia
- The analysis includes individualized modeling and results for each state's portion of the Philadelphia area in addition to aggregate regional results

Case Study – Philadelphia: Emission Reduction Targets

- To achieve attainment, the Philadelphia area would need to reduce local NO_X emissions to an estimated 133,000 TPY
- Baseline NO_X emissions are projected to decline dramatically in the future, decreasing by 79,000 TPY between 2002 and 2010, and by an additional 86,000 TPY between 2010 and 2015
- To reach attainment by 2010, the Philadelphia area would need to reduce local NO_X emissions by an estimated 114,000 TPY (247,000 – 133,000 = 114,000, from figure below)
- To reach attainment by 2015, the Philadelphia area would need to reduce local NO_X emissions by an estimated 28,000 TPY (161,000 – 133,000 = 28,000, from figure below)

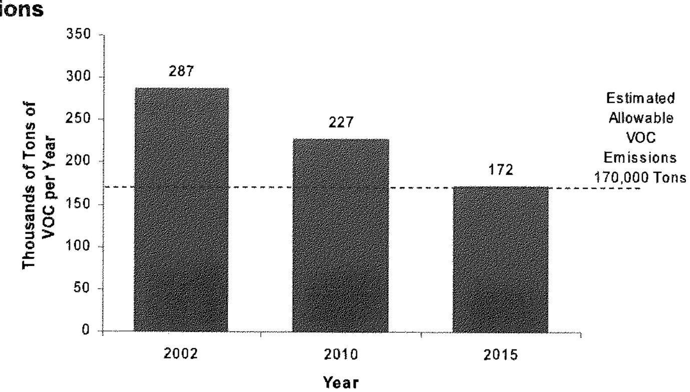
Figure P-1. Baseline NO_X Emissions in the Philadelphia Area Compared to the Allowable NO_X Emissions



Case Study – Philadelphia: Emission Reduction Targets (cont.)

- To achieve attainment, the Philadelphia area would need to reduce local VOC emissions to roughly 170,000 TPY
- Baseline VOC emissions are projected to decline dramatically in the future, decreasing by 60,000 TPY between 2002 and 2010, and by an additional 50,000 TPY between 2010 and 2015
- To reach attainment by 2010, the Philadelphia area would need to reduce local VOC emissions by an estimated 57,000 TPY (227,000 – 170,000 = 57,000, from figure below)
- To reach attainment by 2015, it is estimated that the Philadelphia area would need to reduce local VOC emissions by less than 2,000 TPY (172,000 – 170,000 = 2,000, from figure below)

Figure P-2. Baseline VOC Emissions in the Philadelphia Area Compared to the Allowable VOC Emissions



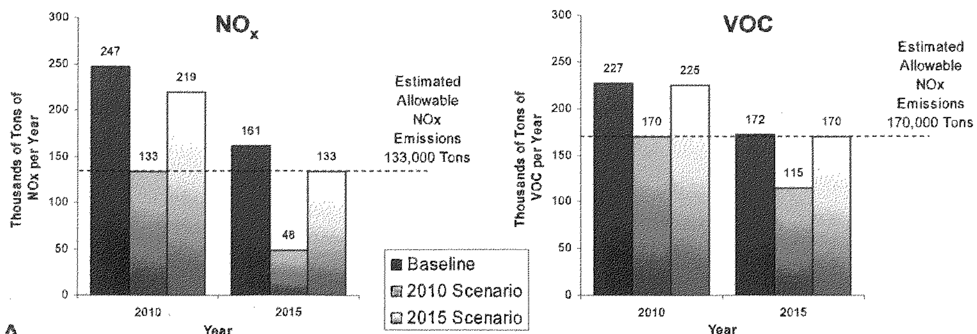
Case Study – Philadelphia: Emission Reductions and Costs

- The 2010 Attainment Scenario would include maximum implementation of identified available NO_x and VOC control measures for the Philadelphia area
  - The maximum identified available NO_x reductions amount to about 52,000 TPY, less than half the reductions needed for attainment
  - We assume that the 2010 Scenario, to bring the Philadelphia area into attainment, would include additional NO_x reductions of 62,000 TPY at the cost of $48,000 per ton
    - The most expensive available NO_x control measure identified by Sierra et al. (2005) would cost $48,000 per ton
    - We assume that the costs of these additional NO_x reductions would be divided among local emission sources according to their relative NO_x emission levels
  - Since $48,000 per ton is likely a conservative estimate of the cost of unidentified NO_x reductions, we develop and model a sensitivity case for the 2010 Scenario
  - The maximum identified available VOC reductions amount to about 50,000 TPY, but we assume that additional VOC reductions of at least 7,000 TPY would come along with the additional unidentified NO_x reductions
- The 2015 Attainment Scenario would include a subset of the identified available NO_x and VOC control measures for the Philadelphia area
  - We assume that the 2015 Scenario would achieve the required NO_x and VOC reductions through the identified control measures in the least costly way possible
- The 2010 Attainment Scenario would lead to greater local emissions reductions in 2015 than the 2015 Attainment Scenario (though the 2015 Scenario would achieve attainment in 2015), but would also impose substantially greater costs on the Philadelphia area

Case Study – Philadelphia: Emission Reductions and Costs (cont.)

- The 2010 Attainment Scenario would generate estimated local NO_x reductions of 114,000 TPY and local VOC reductions of 57,000 TPY
  - The plan would achieve these reductions by 2010 and bring the Philadelphia area into attainment in 2010
  - In 2015, the reductions would continue and emissions are estimated to be below attainment levels because of additional federal controls
- The 2015 Attainment Scenario would generate estimated local NO_x reductions of 28,000 TPY and local VOC reductions of 2,000 TPY
  - The case would achieve these reductions by 2010
  - By 2015, it is estimated that the reductions would bring the Philadelphia area into attainment because of additional federal controls

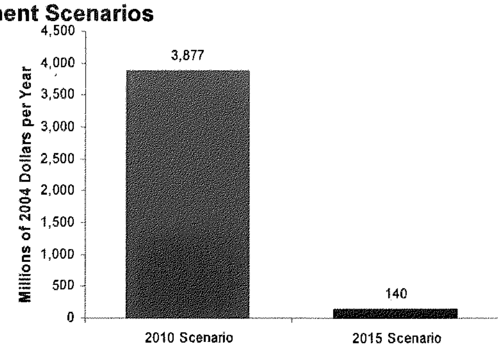
Figure P-3. Emissions in the Philadelphia Area in 2010 and 2015 under the 2010 and 2015 Attainment Scenarios



Case Study – Philadelphia: Emission Reductions and Costs (cont.)

- The 2015 Attainment Scenario is estimated to cost significantly less than the 2010 Attainment Scenario
  - The 2015 Scenario would require approximately 82 percent fewer local NO_x+VOC reductions than the 2010 Scenario
  - The cost of the 2015 Scenario would be roughly 96 percent lower than the cost of the 2010 Scenario
  - Not only would the 2015 Scenario include fewer local control measures than the 2010 Scenario, the controls included in the 2015 Scenario would be, on average, less expensive on a cost-per-ton basis
- Attainment costs associated with the 2010 Attainment Scenario are estimated at 3.9 billion annually
- The 2015 Attainment Scenario would cost an estimated $140 million annually

Figure P-4. Annual Attainment Costs to the Philadelphia Area under the 2010 and 2015 Attainment Scenarios



Case Study – Philadelphia: Emission Reductions and Costs (cont.)

- The 2010 Attainment Scenario would lead to greater air quality benefits, but substantially greater costs than the 2015 Attainment Scenario

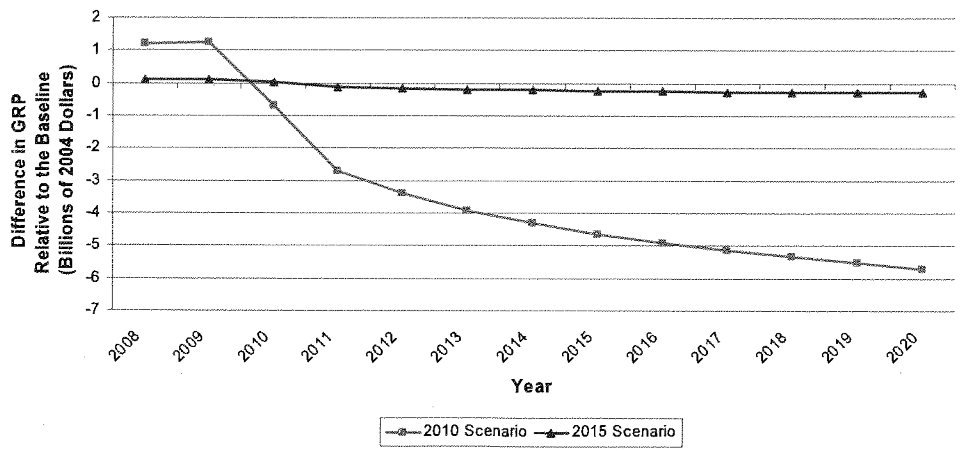
Table P-1. Summary Comparison of 2010 and 2015 Attainment Scenarios for the Philadelphia Area

	Local Emissions Reductions (NOx+VOC)	Annual Cost (billions)	Year of Attainment
2010 Scenario	171,000 tons	$3.9	2010
2015 Scenario	31,000 tons	$0.1	2015

- The following tables and figures provide information on the economic impacts in the Philadelphia area under the 2010 and 2015 Attainment Scenarios
  - Costs translate into both negative and positive (due to increased local spending) economic impacts
  - Air quality benefits translate into positive amenity value impacts
  - The reported results account for the net effects of these negative and positive impacts

- It is estimated that the 2010 Attainment Scenario would reduce gross regional product ("GRP") in the Philadelphia area by more than $5.5 billion in 2020, while the 2015 Attainment Scenario would reduce GRP by less than $300 million in 2020

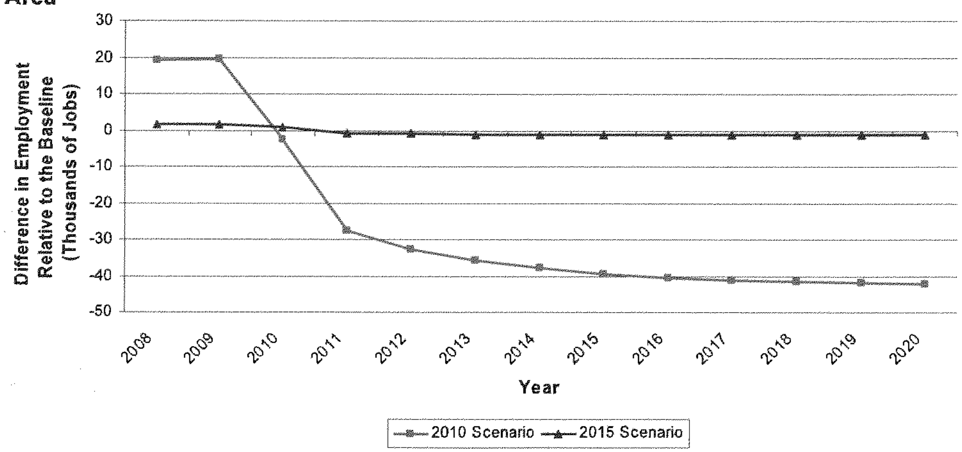
Figure P-5. Impacts of 2010 and 2015 Attainment Scenarios on GRP in the Philadelphia Area



Case Study – Philadelphia: Economic Impacts (cont.)

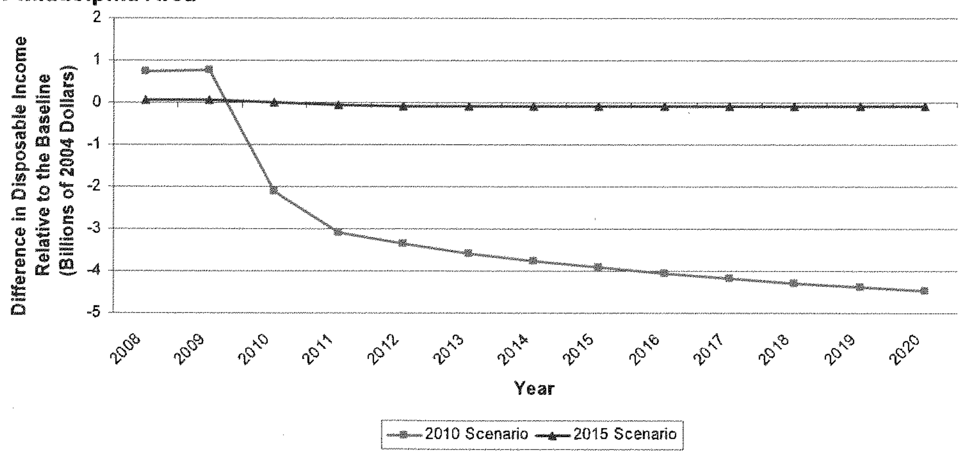
- It is estimated that the 2010 Attainment Scenario would reduce employment in the Philadelphia area by about 42,000 jobs in 2020, while the 2015 Attainment Scenario would reduce employment by about 1,000 jobs in 2020

Figure P-6. Impacts of 2010 and 2015 Attainment Scenarios on Employment in the Philadelphia Area



- It is estimated that the 2010 Attainment Scenario would reduce disposable personal income in the Philadelphia area by about $4.5 billion dollars in 2020, while the 2015 Attainment Scenario would reduce disposable personal income by less than $100 million in 2020

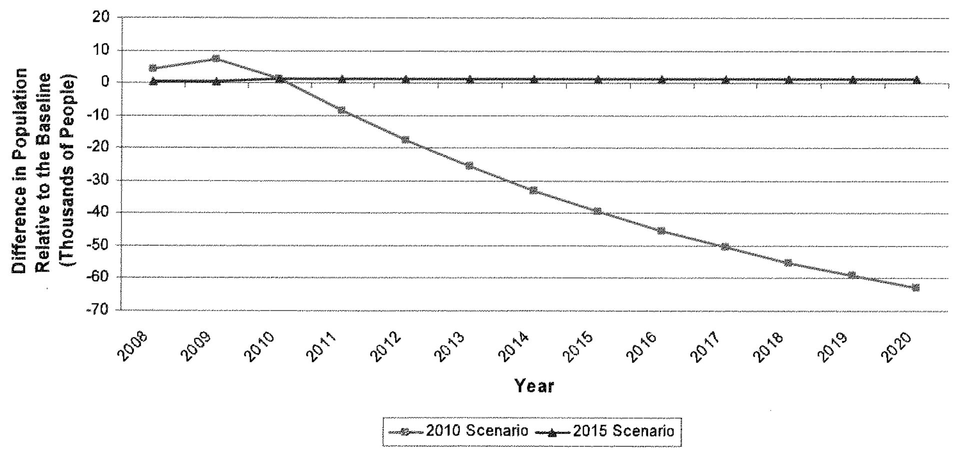
Figure P-7. Impacts of 2010 and 2015 Attainment Scenarios on Disposable Income in the Philadelphia Area



Case Study – Philadelphia: Economic Impacts (cont.)

- It is estimated that the 2010 Attainment Scenario would reduce the population of the Philadelphia area by almost 63,000 people in 2020, while the 2015 Attainment Scenario would increase the population by about 1,000 people in 2020
  - Increased amenity values, together with low negative impacts on GRP, employment, and income, lead to positive population effects in the 2015 Scenario

Figure P-8. Impacts of 2010 and 2015 Attainment Scenarios on the Population of the Philadelphia Area



Case Study – Philadelphia: Economic Impacts (cont.)

- The differences between the economic impacts of the 2010 and 2015 Attainment Scenarios are similar for each state's portion of the Philadelphia area

Table P-2. Summary Economic Impacts of the 2010 and 2015 Attainment Scenarios in the Philadelphia Area in 2020, by State

	Difference in GRP Relative to the Baseline (Millions of 2004 Dollars)		Difference in Employment Relative to the Baseline (Jobs)		Difference in Disposable Income Relative to the Baseline (Millions of 2004 Dollars)		Difference in Population Relative to the Baseline (People)	
	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario
Delaware	-912	-73	-7,107	-312	-608	-21	-10,417	-85
Maryland	-36	0	-433	1	-57	0	-993	70
New Jersey	-1,626	-47	-13,193	-127	-1,467	-15	-20,834	866
Pennsylvania	-3,118	-159	-21,303	-660	-2,353	-58	-30,615	288
Total	**-5,691**	**-279**	**-42,035**	**-1,098**	**-4,485**	**-94**	**-62,859**	**1,139**

- Estimated decreases in GRP, employment, personal income, and population in the Philadelphia area lead to estimated decreases in tax revenues from the Philadelphia area
  - Baseline state tax revenue forecasts come from projections based on the available future fiscal plans for each state (Delaware 2005, Maryland 2005, New Jersey 2005, and Pennsylvania 2005)

Table P-3. Impacts of the 2010 and 2015 Attainment Scenarios on Tax Revenues from the Philadelphia Area in 2020

	Difference in Tax Revenue Relative to the Baseline					
	State Tax Revenue (%)		State Tax Revenue (Millions)		Local Tax Revenue (%)	
Philadelphia Region	2010 Plan	2015 Plan	2010 Plan	2015 Plan	2010 Plan	2015 Plan
Delaware	-1.69%	-0.06%	-$68	-$2	-1.35%	-0.04%
Maryland	-1.55%	0.00%	-$4	$0	-1.26%	0.01%
New Jersey	-1.26%	-0.01%	-$86	-$1	-0.87%	0.00%
Pennsylvania	-1.28%	-0.03%	-$115	-$3	-0.98%	-0.02%

Case Study – Philadelphia: Economic Impacts (cont.)

- It is estimated that the 2010 Attainment Scenario would increase the prices of consumer goods in the Philadelphia area by 0.51 percent, while the 2015 Attainment Scenario would have a negligible effect on prices of consumer goods in the Philadelphia area, as measured by the Personal Consumption Expenditure ("PCE") index

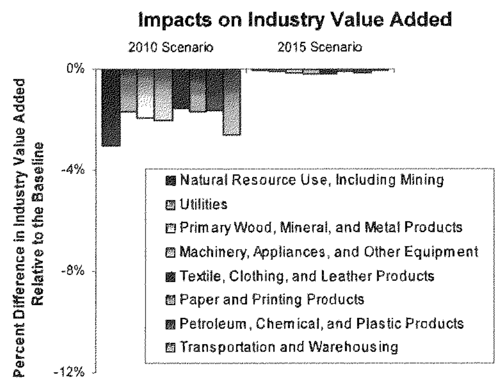
Table P-4. Estimated Impacts of the 2010 and 2015 Attainment Scenarios on the PCE Index in the Philadelphia Area in 2020

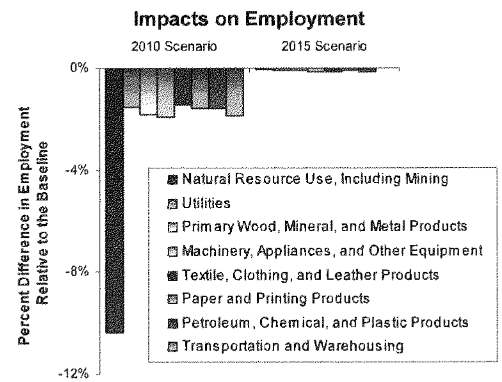
	Change in PCE Index Relative to the Baseline	
	2010 Scenario	2015 Scenario
Philadelphia	0.51%	0.01%
Delaware	0.66%	0.01%
Maryland	0.69%	0.01%
New Jersey	0.53%	0.01%
Pennsylvania	0.47%	0.01%

Case Study – Philadelphia: Economic Impacts (cont.)

- The estimated economic impacts in the Philadelphia area would affect a wide array of industry sectors

Figure P-9. Economic Impacts of 2010 and 2015 Attainment Scenarios on Eight of the Top Negatively Impacted Industry Sectors in the Philadelphia Area in 2020





Note: For a particular industry, industry value added is the value of industry output net the value of intermediate goods. Industry value added is the portion the industry output that contributes to the region's overall GRP.

- Additional discussion at the end of the section provides more detailed results by industry sector, occupation, and state

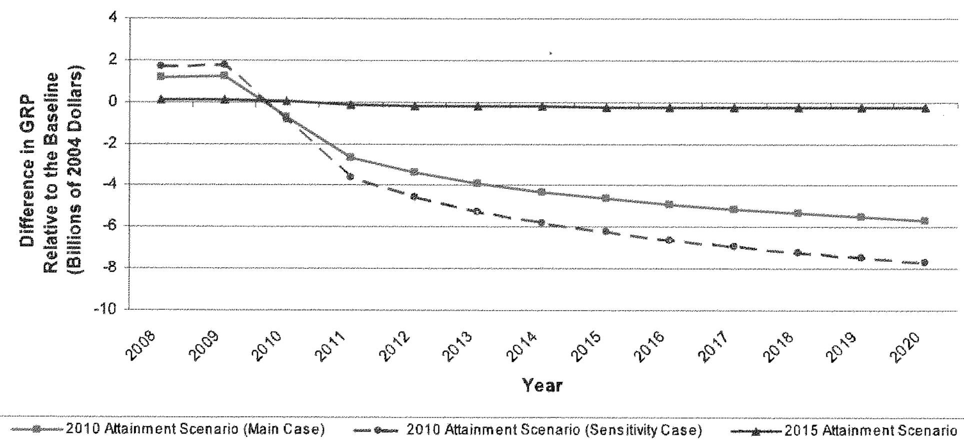
Case Study – Philadelphia: Economic Impacts (cont.)

- The available control measures identified by Sierra et al. (2005) would not provide sufficient NO_x reductions to enable the Philadelphia area to reach attainment in 2010, so we made assumptions about unidentified NO_x reductions, as described earlier in the report
- In addition to the main case presented earlier in the report, we develop and model a sensitivity case for the 2010 Attainment Scenario
  - As described earlier in the report, $48,000 per ton is the cost of the most expensive NO_x reduction measure identified for the Philadelphia area by Sierra et al. (2005)
  - To model our main case for the 2010 Scenario, we assumed that unidentified NO_x reductions would be available for $48,000 per ton, which is likely to be a conservative estimate of the cost per ton, as described earlier in the report
  - Unidentified reductions would need to come from measures such as plant shutdowns or severe mobile traffic restrictions, which cannot be readily modeled in REMI
  - To provide a sensitivity case, we evaluate the 2010 Attainment Scenario under the assumption that unidentified NO_x reductions would cost $75,000 per ton rather than $48,000 per ton
- The following figures present the estimated economic impacts of the sensitivity case

Case Study – Philadelphia: Economic Impacts (cont.)

- The sensitivity case assumptions increase the estimated GRP impacts of the 2010 Attainment Scenario to almost $8 billion in 2020

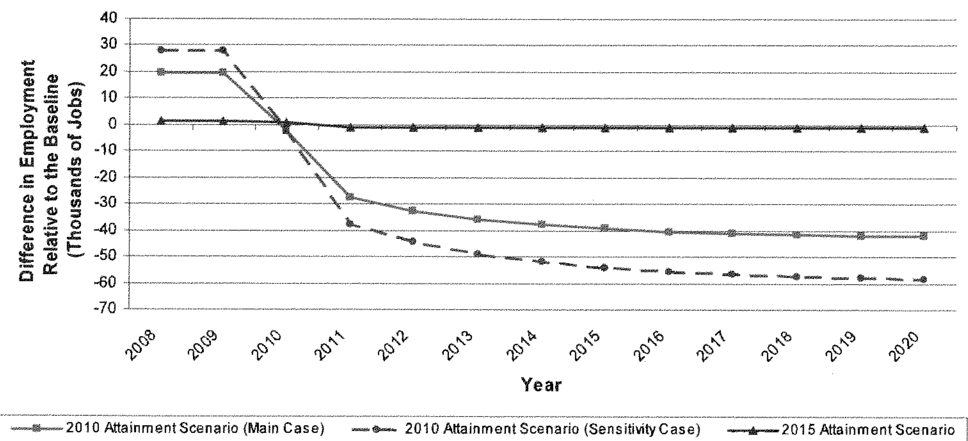
Figure P-10. Impacts of the Sensitivity Case on GRP in the Philadelphia Area



Case Study – Philadelphia: Economic Impacts (cont.)

- The sensitivity case assumptions increase the estimated employment impacts of the 2010 Attainment Scenario to almost 60,000 jobs in 2020

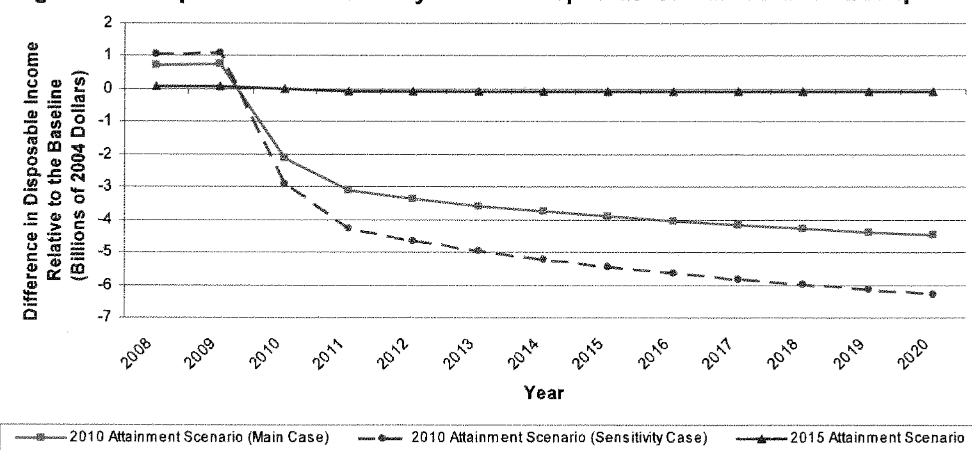
Figure P-11. Impacts of the Sensitivity Case on Employment in the Philadelphia Area



Case Study – Philadelphia: Economic Impacts (cont.)

- The sensitivity case assumptions increase the estimated disposable income impacts of the 2010 Attainment Scenario to over $6 billion in 2020

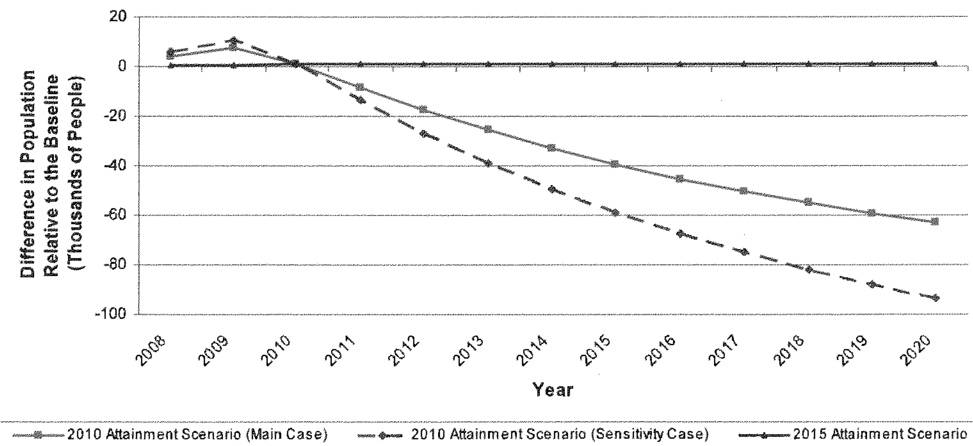
Figure P-12. Impacts of the Sensitivity Case on Disposable Income in the Philadelphia Area



Case Study – Philadelphia: Economic Impacts (cont.)

- The sensitivity case assumptions increase the estimated population impacts of the 2010 Attainment Scenario to over 90,000 people in 2020

Figure P-13. Impacts of the Sensitivity Case on Population in the Philadelphia Area



Case Study – Philadelphia: Economic Impacts (cont.)

- The following tables provide detailed economic impact results for our main case by industry sector, occupation, and state
  - The estimated economic impacts would affect a wide array of industry sectors and occupations
  - The economic impacts in each state's portion of the Philadelphia area are similar to the impacts in the aggregate region

Table P-5. Estimated Economic Impacts of the 2010 and 2015 Attainment Scenarios in the Philadelphia Area in 2020, by Industry Sector

	GRP (Millions)		Employment (Jobs)		GRP (%)		Employment (%)	
Sector	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario
Natural Resource Use, Including Mining	-$13	$0	-1,020	-5	-3.04%	-0.07%	-10.38%	-0.05%
Utilities	-$112	-$7	-246	-17	-1.67%	-0.10%	-1.55%	-0.10%
Construction	-$128	$0	-2,306	6	-1.02%	0.00%	-0.98%	0.00%
Primary Wood, Mineral, and Metal Products	-$77	-$5	-468	-29	-1.95%	-0.13%	-1.84%	-0.11%
Machinery, Appliances, and Other Equipment	-$1,279	-$132	-2,231	-178	-2.02%	-0.21%	-1.90%	-0.15%
Food, Beverage, and Tobacco Products	-$67	-$5	-467	-38	-1.15%	-0.08%	-1.09%	-0.09%
Textile, Clothing, and Leather Products	-$15	-$2	-96	-11	-1.56%	-0.18%	-1.43%	-0.16%
Paper and Printing Products	-$68	-$4	-531	-31	-1.68%	-0.11%	-1.59%	-0.09%
Petroleum, Chemical, and Plastic Products	-$273	-$22	-945	-75	-1.61%	-0.13%	-1.57%	-0.13%
Wholesale and Retail Trade	-$849	-$31	-8,029	-233	-1.23%	-0.04%	-1.30%	-0.04%
Transportation and Warehousing	-$272	-$3	-2,510	-23	-2.60%	-0.03%	-1.85%	-0.02%
Information, Finance, and Real Estate	-$1,233	-$32	-4,234	-90	-0.98%	-0.03%	-0.85%	-0.02%
Services	-$1,087	-$37	-15,308	-447	-0.71%	-0.02%	-0.67%	-0.02%
State and Local Government	-$217	$1	-3,644	72	-0.75%	0.01%	-0.75%	0.01%
Total for All Sectors	**-$5,691**	**-$279**	**-42,035**	**-1,098**	**-1.13%**	**-0.06%**	**-0.92%**	**-0.02%**

Table P-6. Estimated Economic Impacts of the 2010 and 2015 Attainment Scenarios in the Delaware Portion of the Philadelphia Area in 2020, by Industry Sector

	GRP (Millions)		Employment (Jobs)		GRP (%)		Employment (%)	
Sector	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario
Natural Resource Use, Including Mining	-$4	$0	-528	-1	-19.71%	-0.10%	-34.47%	-0.05%
Utilities	-$20	-$2	-41	-4	-1.95%	-0.17%	-1.80%	-0.16%
Construction	-$25	$0	-503	-2	-1.51%	-0.01%	-1.44%	-0.01%
Primary Wood, Mineral, and Metal Products	-$9	-$1	-60	-8	-3.35%	-0.43%	-2.86%	-0.36%
Machinery, Appliances, and Other Equipment	-$217	-$36	-352	-51	-3.92%	-0.65%	-2.86%	-0.42%
Food, Beverage, and Tobacco Products	-$14	-$2	-161	-21	-1.63%	-0.21%	-1.49%	-0.20%
Textile, Clothing, and Leather Products	-$3	-$1	-21	-3	-3.02%	-0.50%	-2.86%	-0.47%
Paper and Printing Products	-$10	-$1	-77	-9	-2.84%	-0.36%	-2.86%	-0.35%
Petroleum, Chemical, and Plastic Products	-$45	-$6	-171	-24	-2.41%	-0.33%	-2.40%	-0.34%
Wholesale and Retail Trade	-$109	-$6	-1,207	-50	-1.60%	-0.08%	-1.68%	-0.07%
Transportation and Warehousing	-$38	$0	-394	-4	-3.48%	-0.04%	-2.68%	-0.03%
Information, Finance, and Real Estate	-$193	-$7	-667	-23	-1.15%	-0.04%	-1.00%	-0.04%
Services	-$191	-$10	-2,227	-105	-0.84%	-0.04%	-0.88%	-0.04%
State and Local Government	-$36	-$1	-697	-6	-1.10%	-0.01%	-1.10%	-0.01%
Total for All Sectors	**-$912**	**-$73**	**-7,107**	**-312**	**-1.46%**	**-0.11%**	**-1.31%**	**-0.06%**

Table P-7. Estimated Economic Impacts of the 2010 and 2015 Attainment Scenarios in the Maryland Portion of the Philadelphia Area in 2020, by Industry Sector

	GRP (Millions)		Employment (Jobs)		GRP (%)		Employment (%)	
Sector	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario
Natural Resource Use, Including Mining	-$1	$0	-18	0	-2.09%	-0.02%	-5.34%	-0.01%
Utilities	$0	$0	-2	0	-1.15%	0.02%	-1.00%	0.03%
Construction	-$2	$0	-46	0	-1.51%	0.00%	-1.49%	0.00%
Primary Wood, Mineral, and Metal Products	$0	$0	-3	0	-0.95%	-0.03%	-0.86%	-0.02%
Machinery, Appliances, and Other Equipment	-$7	$0	-17	0	-0.98%	-0.04%	-1.07%	-0.03%
Food, Beverage, and Tobacco Products	$0	$0	-1	0	-0.77%	-0.02%	-0.65%	-0.01%
Textile, Clothing, and Leather Products	$0	$0	-1	0	-0.76%	-0.03%	-0.71%	-0.03%
Paper and Printing Products	$0	$0	-1	0	-3.83%	0.00%	-3.80%	0.00%
Petroleum, Chemical, and Plastic Products	-$2	$0	-6	0	-0.78%	-0.02%	-0.74%	-0.02%
Wholesale and Retail Trade	-$6	$0	-100	-1	-1.60%	-0.07%	-1.69%	-0.02%
Transportation and Warehousing	-$7	$0	-58	0	-3.95%	-0.04%	-2.41%	0.00%
Information, Finance, and Real Estate	-$4	$0	-30	0	-1.26%	-0.05%	-1.11%	0.00%
Services	-$5	$0	-113	0	-0.76%	0.00%	-0.78%	0.00%
State and Local Government	-$2	$0	-39	3	-0.84%	0.06%	-0.84%	0.06%
Total for All Sectors	**-$36**	**$0**	**-433**	**1**	**-1.23%**	**-0.08%**	**-1.18%**	**0.00%**

Table P-8. Estimated Economic Impacts of the 2010 and 2015 Attainment Scenarios in the New Jersey Portion of the Philadelphia Area in 2020, by Industry Sector

	GRP (Millions)		Employment (Jobs)		GRP (%)		Employment (%)	
Sector	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario
Natural Resource Use, Including Mining	-$5	$0	-266	-1	-2.35%	-0.03%	-8.47%	-0.03%
Utilities	-$37	-$3	-109	-8	-1.73%	-0.13%	-1.60%	-0.12%
Construction	-$40	$0	-724	6	-0.96%	0.01%	-0.91%	0.01%
Primary Wood, Mineral, and Metal Products	-$31	-$1	-184	-7	-1.59%	-0.07%	-1.51%	-0.06%
Machinery, Appliances, and Other Equipment	-$357	-$25	-494	-26	-1.66%	-0.11%	-1.58%	-0.08%
Food, Beverage, and Tobacco Products	-$14	-$1	-93	-3	-0.94%	-0.04%	-0.85%	-0.03%
Textile, Clothing, and Leather Products	-$2	$0	-14	-1	-1.20%	-0.07%	-1.13%	-0.07%
Paper and Printing Products	-$17	-$1	-148	-4	-1.40%	-0.04%	-1.33%	-0.04%
Petroleum, Chemical, and Plastic Products	-$74	-$3	-280	-9	-2.15%	-0.08%	-2.00%	-0.07%
Wholesale and Retail Trade	-$279	-$7	-2,846	-49	-1.15%	-0.03%	-1.23%	-0.02%
Transportation and Warehousing	-$92	-$1	-922	-5	-2.84%	-0.02%	-1.94%	-0.01%
Information, Finance, and Real Estate	-$298	-$4	-1,263	-13	-1.00%	-0.01%	-0.85%	-0.01%
Services	-$289	-$5	-4,357	-69	-0.62%	-0.01%	-0.59%	-0.01%
State and Local Government	-$91	$2	-1,493	62	-0.68%	0.03%	-0.68%	0.03%
Total for All Sectors	**-$1,626**	**-$47**	**-13,193**	**-127**	**-1.06%**	**-0.03%**	**-0.85%**	**-0.01%**

Table P-9. Estimated Economic Impacts of the 2010 and 2015 Attainment Scenarios in the Pennsylvania Portion of the Philadelphia Area in 2020, by Industry Sector

	GRP (Millions)		Employment (Jobs)		GRP (%)		Employment (%)	
Sector	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario	2010 Scenario	2015 Scenario
Natural Resource Use, Including Mining	-$4	$0	-208	-3	-2.05%	-0.12%	-4.31%	-0.07%
Utilities	-$56	-$3	-94	-4	-1.56%	-0.07%	-1.44%	-0.07%
Construction	-$61	$0	-1,033	2	-0.93%	0.00%	-0.87%	0.00%
Primary Wood, Mineral, and Metal Products	-$37	-$3	-221	-15	-2.16%	-0.16%	-2.04%	-0.13%
Machinery, Appliances, and Other Equipment	-$698	-$72	-1,368	-100	-1.96%	-0.20%	-1.89%	-0.14%
Food, Beverage, and Tobacco Products	-$38	-$2	-212	-14	-1.13%	-0.07%	-1.01%	-0.06%
Textile, Clothing, and Leather Products	-$10	-$1	-60	-6	-1.44%	-0.15%	-1.30%	-0.14%
Paper and Printing Products	-$42	-$3	-305	-18	-1.65%	-0.10%	-1.56%	-0.09%
Petroleum, Chemical, and Plastic Products	-$153	-$13	-488	-42	-1.34%	-0.11%	-1.28%	-0.11%
Wholesale and Retail Trade	-$456	-$19	-3,877	-133	-1.20%	-0.05%	-1.27%	-0.04%
Transportation and Warehousing	-$135	-$2	-1,136	-15	-2.27%	-0.03%	-1.60%	-0.02%
Information, Finance, and Real Estate	-$738	-$21	-2,275	-54	-0.93%	-0.03%	-0.81%	-0.02%
Services	-$603	-$21	-8,610	-273	-0.72%	-0.03%	-0.67%	-0.02%
State and Local Government	-$88	-$1	-1,415	13	-0.72%	0.01%	-0.72%	0.01%
Total for All Sectors	**-$3,118**	**-$159**	**-21,303**	**-660**	**-1.10%**	**-0.06%**	**-0.87%**	**-0.03%**

Table P-10. Estimated Employment Impacts of the 2010 and 2015 Attainment Scenarios in the Philadelphia Area in 2020, by Occupation

	Philadelphia Area			
	2010 Scenario		2015 Scenario	
Field	(Jobs)	(%)	(Jobs)	(%)
Business and Finance	-4,168	-0.85%	-118	-0.02%
Math and Engineering	-1,746	-0.83%	-75	-0.04%
Sciences	-398	-0.87%	-13	-0.03%
Social Services	-522	-0.62%	-7	-0.01%
Law	-281	-0.67%	-8	-0.02%
Education	-2,215	-0.67%	1	0.00%
Arts	-553	-0.83%	-18	-0.03%
Healthcare	-1,348	-0.28%	-2	0.00%
Protective Services	-768	-0.75%	-4	0.00%
Food Services	-3,288	-1.05%	-98	-0.03%
Groundskeeping and Personal Services	-3,114	-0.91%	-75	-0.02%
Office Administration	-11,691	-0.95%	-312	-0.03%
Agriculture and Forestry	-618	-2.43%	-3	-0.01%
Construction	-2,077	-1.00%	-11	-0.01%
Repair and Maintenance	-1,962	-1.09%	-57	-0.03%
Production	-3,354	-1.38%	-205	-0.08%
Transportation	-3,934	-1.38%	-92	-0.03%
Total	-42,035	-0.92%	-1,098	-0.02%

Table P-11. Estimated Employment Impacts of the 2010 and 2015 Attainment Scenarios in the Delaware Portion of the Philadelphia Area in 2020, by Occupation

	Delaware			
	2010 Scenario		2015 Scenario	
Field	(Jobs)	(%)	(Jobs)	(%)
Business and Finance	-718	-1.13%	-33	-0.05%
Math and Engineering	-273	-1.07%	-20	-0.08%
Sciences	-86	-1.66%	-4	-0.08%
Social Services	-84	-0.86%	-3	-0.03%
Law	-42	-0.86%	-2	-0.04%
Education	-338	-1.02%	-6	-0.02%
Arts	-82	-1.03%	-4	-0.05%
Healthcare	-185	-0.40%	-4	-0.01%
Protective Services	-135	-1.05%	-4	-0.03%
Food Services	-481	-1.28%	-21	-0.06%
Groundskeeping and Personal Services	-509	-1.36%	-19	-0.05%
Office Administration	-1,862	-1.23%	-80	-0.05%
Agriculture and Forestry	-307	-6.94%	-1	-0.02%
Construction	-427	-1.44%	-6	-0.02%
Repair and Maintenance	-332	-1.54%	-16	-0.07%
Production	-591	-1.95%	-65	-0.21%
Transportation	-657	-1.94%	-25	-0.07%
Total	-7,107	-1.31%	-312	-0.06%

Table P-12. Estimated Employment Impacts of the 2010 and 2015 Attainment Scenarios in the Maryland Portion of the Philadelphia Area in 2020, by Occupation

	Maryland			
	2010 Scenario		2015 Scenario	
Field	(Jobs)	(%)	(Jobs)	(%)
Business and Finance	-34	-0.92%	0	0.00%
Math and Engineering	-9	-0.74%	0	0.00%
Sciences	-3	-0.84%	0	0.01%
Social Services	-4	-0.62%	0	0.02%
Law	-1	-0.53%	0	0.01%
Education	-18	-0.76%	1	0.04%
Arts	-4	-0.83%	0	0.00%
Healthcare	-8	-0.24%	1	0.02%
Protective Services	-6	-0.77%	0	0.03%
Food Services	-38	-1.23%	0	-0.02%
Groundskeeping and Personal Services	-25	-1.06%	0	0.00%
Office Administration	-120	-1.22%	0	0.00%
Agriculture and Forestry	-10	-1.57%	0	0.00%
Construction	-37	-1.47%	0	0.00%
Repair and Maintenance	-24	-1.30%	0	0.00%
Production	-24	-1.07%	0	-0.02%
Transportation	-67	-1.93%	0	0.00%
Total	-433	-1.18%	1	0.00%

Table P-13. Estimated Employment Impacts of the 2010 and 2015 Attainment Scenarios in the New Jersey Portion of the Philadelphia Area in 2020, by Occupation

	New Jersey			
	2010 Scenario		2015 Scenario	
Field	(Jobs)	(%)	(Jobs)	(%)
Business and Finance	-1,250	-0.80%	-15	-0.01%
Math and Engineering	-502	-0.79%	-12	-0.02%
Sciences	-116	-0.83%	-1	-0.01%
Social Services	-156	-0.55%	1	0.00%
Law	-83	-0.63%	-1	-0.01%
Education	-734	-0.63%	19	0.02%
Arts	-154	-0.76%	-3	-0.01%
Healthcare	-337	-0.21%	11	0.01%
Protective Services	-272	-0.69%	5	0.01%
Food Services	-1,111	-0.93%	-20	-0.02%
Groundskeeping and Personal Services	-975	-0.78%	-11	-0.01%
Office Administration	-3,795	-0.91%	-49	-0.01%
Agriculture and Forestry	-163	-1.65%	0	0.00%
Construction	-655	-0.92%	3	0.00%
Repair and Maintenance	-650	-1.03%	-10	-0.02%
Production	-889	-1.21%	-29	-0.04%
Transportation	-1,350	-1.35%	-15	-0.01%
Total	-13,192	-0.85%	-127	-0.01%

Table P-14. Estimated Employment Impacts of the 2010 and 2015 Attainment Scenarios in the Pennsylvania Portion of the Philadelphia Area in 2020, by Occupation

	Pennsylvania			
	2010 Scenario		2015 Scenario	
Field	(Jobs)	(%)	(Jobs)	(%)
Business and Finance	-2,165	-0.81%	-70	-0.03%
Math and Engineering	-962	-0.81%	-43	-0.04%
Sciences	-193	-0.74%	-8	-0.03%
Social Services	-277	-0.60%	-5	-0.01%
Law	-154	-0.66%	-5	-0.02%
Education	-1,125	-0.64%	-14	-0.01%
Arts	-313	-0.82%	-11	-0.03%
Healthcare	-819	-0.29%	-9	0.00%
Protective Services	-355	-0.72%	-5	-0.01%
Food Services	-1,658	-1.09%	-56	-0.04%
Groundskeeping and Personal Services	-1,605	-0.91%	-45	-0.03%
Office Administration	-5,915	-0.91%	-183	-0.03%
Agriculture and Forestry	-137	-1.31%	-1	-0.01%
Construction	-958	-0.91%	-7	-0.01%
Repair and Maintenance	-956	-1.02%	-32	-0.03%
Production	-1,850	-1.36%	-111	-0.08%
Transportation	-1,861	-1.26%	-53	-0.04%
Total	-21,303	-0.87%	-660	-0.03%

Conclusions and Implications

- The Philadelphia area would benefit substantially from an alignment of the 8-hour ozone attainment deadline with projected emission reductions associated with existing federal regulations
  - Between 2010 and 2015, it is projected that national regulations will achieve substantial NO_x and VOC reductions in the region
  - Allowing the realization of emission reductions from these national regulations would reduce substantially the negative economic effects associated with the implememention of local control measures
- These results suggest that attainment deadlines should be reconsidered in light of the substantial emissions benefits from national regulations and the extreme difficulties some regions would have to meet ambient air quality standards by the current deadlines

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STATEMENT OF STEPHEN MORET, PRESIDENT AND CEO, BATON ROUGE AREA CHAMBER OF COMMERCE

INTRODUCTION

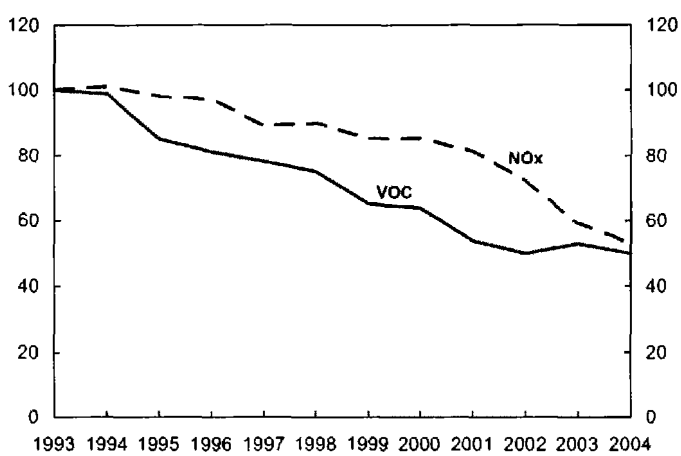
The Baton Rouge Area Chamber is made up of over 1,500 businesses in the Baton Rouge metropolitan area. Our membership is comprised of large and small businesses that are as varied as the people in our community. As the voice of the Baton Rouge area business community, the Chamber strives to foster economic and community development so that one overriding goal will be met: the Baton Rouge area will be a better place for the people who live and work there.

Unfortunately, as we have tried to grow our community in positive ways, the Chamber, the people, and the businesses in our community have been required to devote substantial time and resources (that otherwise could have been spent on positive steps forward) to make sure that the mechanistic application of the Clean Air Act ("CAA") did not cause greater problems than the ones the act was designed to solve. Cleaner air is an important part of our goal. However, the CAA must incorporate the flexibility necessary to allow our area to use its resources to achieve real progress rather than diverting resources to unnecessary activities that do not advance the goal of improved air quality.

Following the CAA Amendments of 1990, the Baton Rouge area was classified as "serious" nonattainment with the 1-hour National Ambient Air Quality Standard for ozone. Over the last 15 years, the Baton Rouge area community, including the Louisiana Department of Environmental Quality (LDEQ), has worked diligently to achieve attainment. We have followed the strict mandates of the CAA. We have enacted laws and regulations designed to reduce air emissions of ozone forming pollutants, nitrogen oxides (NOx) and volatile organic compounds (VOC). We have submitted plans and emission budgets to EPA. We have installed expensive control equipment to reduce NOx and VOC. We have instituted vehicle inspection programs, raised fees, and performed transportation studies. We have modeled emissions from industry sources, large and small, on-road and off-road vehicles, and biogenic sources (i.e., trees), and modeled the fate and transport of those emissions. In short, the Baton Rouge area has done everything that the CAA and the EPA required and/or suggested. As a result, tremendous emission reductions have been achieved as illustrated in the following chart.

TOTAL INDUSTRIAL VOC AND NOx EMISSIONS IN THE 5-PARISH NONATTAINMENT AREA HAVE DECLINED SUBSTANTIALLY

1993 = 100%



Source: Louisiana Department of Environmental Quality; Baton Rouge Area Chamber analysis

Unfortunately, although the Baton Rouge area came within 1–2 parts per billion ("ppb") of achieving attainment in 1999 and again in 2004, the rote application of the CAA forced us to divert attention and resources away from achieving attainment to fighting the potentially ruinous actions/penalties mandated by the CAA.

Under the CAA, every nonattainment area of similar classification is treated exactly the same way. The Baton Rouge area provides a perfect example of the inequities associated with the application of the CAA. Most "serious" and "severe" ozone nonattainment areas have a large number of industrial emitters and/or a large fleet of vehicles. Our area does not fit this mold. Although Baton Rouge area industry does produce its share of NOx and VOC emissions, our community has a very small fleet of vehicles and those vehicles are fairly new, lower emitting models. Industry has reduced emissions, both voluntarily and through regulation, such that it is difficult to find additional reductions in significant amounts. In fact, industry is not the main source of VOC emissions in Baton Rouge; biogenic sources are actually the highest producers of VOC in the area. Baton Rouge also is not experiencing the slow, steady ozone rise that peaks with a summer afternoon exceedance. Instead, on the infrequent occurrence when there is an exceedance, Baton Rouge now experiences short duration, sharp spikes in ozone production, attributable to highly reactive VOCs reacting with the available NOx. The CAA rules are designed to address the former, but not the latter. Although well intentioned and helpful in many areas, the blind application of CAA statutory mandates and the 'one-size-fits-all' approach does not provide the flexibility and innovation needed to solve Baton Rouge's ozone problem.

In the wake of Hurricanes Katrina and Rita, the Baton Rouge area has taken on a large, permanent increase in population. While we readily have opened up our hearts and homes to our displaced neighbors from the New Orleans region, this influx of population creates new air quality challenges for us as it will result in increased numbers of houses, offices, and cars in the Baton Rouge area. Moreover, our State faces unprecedented challenges that we cannot adequately address without an unprecedented response from Congress. We deeply appreciate your efforts to help rebuild South Louisiana and pray that you will make good on President Bush's promise in Jackson Square to rebuild the Gulf Region better than it was before. The future of our entire State depends on a strong—and swift—Federal response.

At this time, I would like to provide some information about Baton Rouge's nonattainment history, its fight against reformulated gasoline (RFG), and the litigation it has been forced to participate in to protect its interests.

HISTORY OF BR OZONE

The Baton Rouge area's original ozone classification in 1991 of "Serious" was based on a design value that was within 5 percent of the 'Moderate' ozone classification. Over the years, Baton Rouge instituted all of the controls required by law, following EPA's guidance and modeling. The focus of those initial efforts was VOC reductions, which over time were realized.

When it became apparent that the biogenic component of Baton Rouge's emissions was so large that further anthropogenic VOC reductions would have little impact, a NOx strategy was adopted. In other words, the Baton Rouge area had reduced VOC as much as possible. After spending hundreds of millions of dollars to reduce VOC, we learned that was not good enough. EPA-approved studies showed that the Baton Rouge area's ozone levels were strongly sensitive to NOx but not to VOC. In late 2001, the Baton Rouge area implemented a 30 percent across-the-board reduction in major point source NOx emissions, effective as soon as possible but no later than May 2005. The current NOx strategy offers the Baton Rouge area an opportunity for achieving attainment.

The Baton Rouge area has seen a steady and substantial downward trend in its ozone design value. By its 1999 attainment date under the 1-hour standard, Baton Rouge was only 2 ppb from attainment, down from about 40 ppb over attainment in 1991. This contrasts with many other nonattainment areas that showed little improvement or even degradation. Although the Baton Rouge area did not attain the 1-hour standard, it had improved to the point that, according to the classifications under the CAA, the area was at "Marginal" status. Unfortunately, because of the strict requirements of the CAA, Baton Rouge was slated to be reclassified as "Severe," like Houston.

At this point, EPA did work with our community. EPA's models showed that ozone was transported from the Houston/Galveston and Beaumont areas in sufficient amounts that Baton Rouge's own ozone levels were raised by 2–6 ppb, an amount EPA itself termed 'significant' and in fact an amount large enough to have prevented attainment. As a 'downwind' area, Baton Rouge qualified for, and EPA granted, an extension of its attainment date under a nationwide EPA policy. But that policy was struck down by the Fifth Circuit because it was not literally provided for in the CAA.

Judicial decisions interpreting the CAA "bump-up" provision finally forced EPA to reclassify Baton Rouge from 'Serious' to 'Severe' and withdraw its attainment date extension. Despite the fact that Baton Rouge area was only 2 ppb from attainment and would be classified as 'Marginal' under the 1-hour standard, the CAA dictated that Baton Rouge be classified as 'Severe.'

Based on its re-classification to 'Severe' after the bump-up, new, very strict requirements were to be applied to Baton Rouge. The mandate to implement RFG, Section 185 or 'penalty' fees, and a reduced major source threshold were a few of the new requirements imposed on Baton Rouge under the CAA. The new requirements under the 'Severe' standard were projected to cost hundreds of millions of dollars in direct and indirect costs. The economy of the Baton Rouge area was on the brink of a major disruption.

Against this backdrop, two significant events occurred. First, a coalition of Baton Rouge interests joined together to resist the RFG mandate. Second, EPA issued the 8-hour Ozone Implementation Rule. Each of these events will be discussed.

RFG

As the June 23, 2004 deadline for the implementation of RFG in Baton Rouge loomed nearer, it became increasingly apparent that RFG—while successful in areas with large fleets of vehicles—was not a good idea due to the enormous negative impacts it would have on our community. First, it would interfere with attainment because it is designed to decrease VOC emissions, but it actually causes an increase in NOx emissions—the opposite result than what is needed in the Baton Rouge area. Second, it would cause health problems due to increasing rather than decreasing the ozone forming potential of the area. Third, it would create huge economic hardships.

RFG was documented by EPA's approved models (MOBILE6 and MOBILE6.2) to cause NOx increases from on-road vehicles in Baton Rouge. Studies from around the country further documented this fact. When NOx emissions from RFG-fueled off-road vehicles (a significant component of the Baton Rouge inventory) were added, there was a clear "disbenefit" from NOx increases of about 400 tons per year. In other words, RFG use in Baton Rouge would have caused NOx emissions to increase by at least 400 tons. A correlation between RFG and poor vehicle Inspection and Maintenance performance also was documented. The "disbenefits" clearly created substantial challenges with the current EPA-approved ozone control strategy, which relies on NOx decreases.

Further, ethanol-based RFG, which was to be used in Baton Rouge, increased NOx emissions even more than standard RFG, adding to the interference with achieving attainment. Ethanol-based RFG was also proven to increase certain air toxics and VOC emissions through evaporative losses (permeation) and commingling.

RFG in the Baton Rouge area also would have increased health problems associated with ozone. As VOC and NOx are increased, ozone levels are more likely to increase, thus increasing the very health problems the CAA is designed to minimize.

The imposition of RFG in Baton Rouge also would have produced severe economic hardship. A respected LSU Professor of Economics, Dr. Loren Scott, conducted a study in which he found that the economic impacts would be catastrophic. Gas prices were estimated to increase by 10–15 cents per gallon. Approximately 1,000 jobs and tens of millions of dollars in household income were to be lost. The oil marketers would have to retrofit their tanks to meet the UST compatibility requirements for ethanol-based fuel. Dr. Scott's economic model estimated that the cost to Baton Rouge in increased gas prices, lost earnings, and lost sales would be approximately $150 million. Moreover, due to the small size of the 5-parish (county) area, and the ease of gasoline purchases out of the area, many small retailers on the edges of the area would have been put out of business.

There was and is a clear alternative to RFG which was applicable in Baton Rouge. The new Tier 2-low sulfur gasoline has been shown to significantly reduce NOx emissions. Thus, there was no need to implement RFG in Baton Rouge, with its associated "disbenefit" and economic hardship, when a suitable alternative existed that provided as much or greater environmental benefit was soon to go into effect. This low sulfur gasoline was being phased in across the country, including Louisiana, in 2004, with full implementation in 2005. EPA's own rulemaking for Tier 2 gasoline used models to project that the Baton Rouge area would achieve attainment with the ozone standard through its use. This rulemaking even relied upon that fact as economic justification for the rule. The Tier 2 rulemaking did not in any way ever consider that RFG would be required instead of Tier 2 fuel in Baton Rouge. However, although EPA explicitly relied on use of Tier 2 fuel in Louisiana as a justification to pass the rule, the CAA seems to completely preclude a State or region from considering these nationwide fuel improvement programs as an ozone attainment measure. Instead, the Baton Rouge area is forced to use RFG by a completely separate fuel provision in the Act.

The CAA, as written, seemed to offer EPA no flexibility. Having had its transport policy overturned, EPA was understandably reluctant to go out on a limb for Baton Rouge. While EPA expressed concern regarding the evidence presented by Baton Rouge, it felt constrained by the wording of the CAA itself.

The Chamber decided to take the initiative, filing a request in the U.S. Fifth Circuit for a review of EPA's decision regarding the use of RFG in Baton Rouge and requesting a stay of the RFG mandate. All of the evidence noted above was placed before the court. On June 18, 2004, just a few days prior to the deadline for implementing RFG, the Fifth Circuit granted the Chamber's request for a stay. EPA agreed to review the use of RFG and agreed to keep the stay in effect while it conducts that review. However, it is important to note that the existence of the judicial proceedings was the only avenue available to EPA, under the CAA, to review the use of RFG in Baton Rouge. Without the litigation over RFG, EPA would not have been able to fashion a remedy for the Baton Rouge area under the wording of the CAA.

THE 8-HOUR IMPLEMENTATION RULE

When EPA issued the new Implementation Rule for the ozone 8-hour standard in 2004, the Baton Rouge area missed attainment with the new standard by a mere 1 ppb. It was therefore classified under the new, more stringent and protective 8-hour standard as 'Marginal.'

The issuance of the Phase I Implementation Rule provided some benefits for the Baton Rouge area. First, it revoked the old 1-hour standard. Second, a new attainment date of June 15, 2007 was established for compliance with the 8-hour standard for marginal areas. Third, the major source threshold for New Source Review was raised from 25 tons per year (applicable to 'Severe' areas) to 100 tons per year. Fourth, on the effective date of the revocation of the 1-hour standard (June 15, 2005), areas that were once classified as 'Severe' under the 1-hour standard were not obligated to impose penalty fees for continued failure to attain. However, the Implementation Rule does provide one 'disbenefit' to Baton Rouge. Under its so-called 'anti-backsliding' provisions, many of the 'Severe' requirements that applied to the Baton Rouge area would still have to be implemented, even though our community was properly classified as 'Marginal' under the 8-hour standard.

Review of the Implementation Rule was sought by a diverse group of petitioners, including the Chamber. Eventually, all petitions were consolidated in the District of Columbia Circuit where such entities as the South Coast Air Quality District (Southern California), the Louisiana Environmental Action Network, the States of Ohio and Georgia (on behalf of the City of Atlanta), various environmental groups, various industry groups, and certain northern States are all joined together with the Chamber, asserting differing positions on many aspects of the Implementation Rule.

The Chamber has two basic positions in the current litigation.

First, the Phase I Implementation Rule in its current form is important to the Baton Rouge area and must be upheld and protected from the attacks of the Environmental Petitioners. The Environmental Petitioners strenuously contest portions of the rule and will continue to do so. They will advance their arguments in the court and request that the court overturn the Phase I Implementation Rule. If that occurs, the old 1-hour standard may not be revoked, penalty fees may again be applicable for failure to attain the 1-hour standard, and the major source threshold may be returned to 'Severe' levels. Such a result would gravely impact the Baton Rouge area. LDEQ has stated in its Fiscal and Economic Impact that penalty fees would result in an $85 million increase in fees, the possible shut down of facilities, and a negative effect on competition between companies in the Baton Rouge nonattainment area and those on the outside of the area that do not have to pay the penalty fee. A lower major source threshold would cause increased difficulty for sources to modify existing permits, require smaller sources to install tougher control equipment, and require many small industrial sources to obtain Title V major source permits. It is doubtful whether this result will actually assist the Baton Rouge area in solving its ozone problem, and such efforts are not needed as other measures enacted by both the State and EPA will address our ozone issues. For example, LDEQ is targeting specific voluntary HRVOC reduction measures that became effective through agreements with 16 large sources in May 2005 and has extended NOx reduction measures to certain attainment parishes surrounding the nonattainment area. Neither of these measures is prescribed by the CAA, yet they are projected to be effective for our area. Further, EPA has several new programs that will substantially affect ozone. Two examples: (1) In 2006 and 2007 EPA's new clean diesel fuel requirements will take effect and are projected to reduce NOx and PM10 emissions by substantial levels; and (2) powerplants in Louisiana are required to reduce NOx emissions by approximately 50 percent on a statewide aggregate basis under the Clean Air Interstate Rule.

Prior to Hurricanes Katrina and Rita, we had identified the imposition of the penalties associated with a "Severe" classification under the now defunct 1-hour standard as the greatest short-term economic threat facing the Baton Rouge area: taking into account increased fees, likely facility closures, and foregone economic development opportunities, we estimate that our regional economy would sustain a negative economic drain of roughly $300-$500 million per year for the foreseeable future. This obviously would have a hugely detrimental impact on the businesses and families of the Baton Rouge area.

Our second position is that the EPA has no legal authority to require that an area retain or implement requirements that are beyond the requirements of its 8-hour classification. Requirements that were applicable based on its old classification under the 1-hour standard, i.e., the 'anti-backsliding' provisions, are beyond EPA's statutory authority to implement and are not a reasonable interpretation of the Clean Air Act.

The Chamber is forced to assert Baton Rouge's interests in the litigation to ensure that the beneficial aspects of the Implementation Rule are upheld. Although "Marginal" under the 8-hour standard, the Baton Rouge area over the years implemented requirements mandated by the CAA for 'Serious' areas when it was a "Serious' area under the 1-hour standard. Substantial and continuing reductions of ozone in the region have been achieved. Despite this, many petitioners actually seek the imposition of penalty fees and lower major source thresholds. Unless the Implementation Rule is upheld, the Baton Rouge area will again be faced with the more draconian aspects of the CAA, which will again be applied to it in a mechanistic or rote fashion, without the possibility of exception and without real benefit to air quality in our community.

CONCLUSION

As can be seen from our community's history, flexibility is not a hallmark of the CAA. The Chamber understands that the CAA was amended in 1990 to limit EPA's discretion to a certain degree. The addition of certain CAA Subpart 2 provisions specifying the exact programs that apply in a given classification is one example. RFG is another. Unfortunately, stringent provisions, however well-meaning and designed to enhance the quality of the air we breathe, when enacted without exception or with exceptions that are too narrowly drawn and difficult to meet, can lead to results that may end up harming the environment and/or the economy. This seems especially harsh when attainment just barely eludes a community, such as the Baton Rouge area, that has faithfully followed the law and EPA guidance over the years.

STATEMENT OF JOSEPH P. KONCELIK, DIRECTOR, OHIO ENVIRONMENTAL PROTECTION AGENCY

Senator Voinovich, Senator Carper, members of the subcommittee, I am Joe Koncelik, director of the Ohio Environmental Protection Agency, thank you for allowing me to address this important issue regarding the States ability to meet the new 8-hour ozone standard. U.S. EPA's implementation rule for the 8-hour ozone standard has dramatic repercussions for the States. Ohio believes that the current Federal approach to improving air quality lacks coherency. The federally mandated air pollution control programs are on much longer implementation schedules than the deadlines established by U.S. EPA for States to meet the 8-hour ozone standard. A better balance needs to be struck.

On June 15, 2004, U.S. EPA finalized the 8-hour ozone implementation rule. The rule establishes firm deadlines for all of the counties within the States to meet the new, more stringent, 8-hour ozone standard. In all, Ohio has 33 counties that don't meet this standard. By June 2007, Ohio EPA must finalize air pollution control plans that will demonstrate reductions in air emissions enough so as to bring all 33 counties into attainment with the standard.

U.S. EPA has classified all of the nonattainment counties based on air monitoring data. The higher the readings of ozone above the standard the higher classification that county will receive. The classifications from lowest to highest are: basic, moderate, serious, severe and extreme. Most nonattainment areas in the country are designated basic nonattainment. In Ohio, only Northeast Ohio (a total of 8 counties) was classified as moderate nonattainment.

Under this classification scheme, the higher the classification, the more time U.S. EPA gives to meet the standard. Areas classified as basic nonattainment have until 2009 to demonstrate attainment with the new standard. Areas classified as moderate nonattainment have until 2010 to demonstrate attainment.

However, there is a trade off for getting more time; higher nonattainment classifications are accompanied with more stringent federally mandated control programs. In addition, areas with higher classifications have more limits placed on economic growth.

From the day U.S. EPA issued the final implementation rule, Ohio has been concerned with the method used by U.S. EPA to establish the deadlines for the various classifications to meet the 8-hour standard. Despite the fact that the 8-hour standard is far more stringent than the previous 1-hour ozone standard, U.S. EPA gave areas exactly the same amount of time to comply with the new standard. For example, moderate nonattainment areas had 6 years to comply with the 1-hour ozone standard and are given 6 years to comply with the 8-hour standard.

Ohio's concerns grew once it reviewed the logic behind establishing the deadlines for the 8-hour standard. The 1-hour ozone standard deadlines were established by Congress. In setting the deadlines, Congress engaged in a thoughtful process to determine reasonable, appropriate timeframes. Congress concluded that the amount of time required for attainment depends on the available controls and the time it takes to add these controls to existing sources. The congressional record is replete with testimony regarding science and available technology to meet the 1-hour ozone standard. Even though it engaged in this thoughtful process, many areas still were unable to meet the 1-hour standard within the deadlines established despite best efforts to comply.

In developing the compliance schedule for the new 8-hour ozone standard, U.S. EPA ignored the thoughtful process Congress used to establish timeframes. Instead, U.S. EPA used the 1-hour timeframes for the new, stricter 8-hour standard. U.S. EPA failed to consider any new evidence regarding the feasibility of meeting the new 8-hour standard. The result, U.S. EPA established unrealistic deadlines for large regions of the country.

Despite the concerns with the methods used to establish the 8-hour compliance schedule, Ohio EPA has been working very hard to determine exactly what new air pollution controls will be required to put all of its counties into attainment with the 8-hour ozone standard. For basic nonattainment areas, Ohio EPA believes a reasonable level of new controls will be needed to reach attainment by 2009. The enormous challenge lies in moderate nonattainment areas, like Northeast Ohio. Right now, there is no viable air pollution control plan that would place Cleveland and the rest of Northeast Ohio into attainment by 2010. The failure to meet the current Federal deadline will have dramatic repercussions on economic growth in the Cleveland area, an area already facing significant challenges in its economy.

To demonstrate the impossibility of the task of meeting the standard in Northeast Ohio, we have performed studies that show that even if all of industry was shut down and the area depopulated, it would just barely be able to meet the standard by 2010, the applicable deadline under the Federal rule. However, those same studies show that Northeast Ohio could attain the new standard by 2015 using almost exclusively existing local and Federal control programs.

Why does the picture change so dramatically in such a relatively short period of time? The reason is that U.S. EPA has implemented effective regional air pollution control programs that will dramatically improve air quality. However, the mandated reductions will not occur fast enough to benefit areas like Northeast Ohio. These new Federal programs include controls on utilities (CAIR rule) and motor vehicles (clean fuels and new engine standards). U.S. EPA's studies of the effectiveness of these controls show they will be highly effective in helping States meet the new ozone standard. A critically important reason why the Federal programs are so effective is that they mandate reductions on a regional basis. Regional control programs have been shown to be the most effective means of improving air quality in order to meet the 8-hour standard. Alternatively, local control programs on industry and vehicles are shown to be very limited in their effectiveness to reduce 8-hour ozone levels. As a consequence, the most effective tools in improving air quality lie with the Federal Government, not the States.

Although U.S. EPA has the most effective tools, it has placed the States in an impossible situation of mandating compliance with the standard much faster than its control program will achieve reductions. All of the Federal programs that reduce emissions from motor vehicles rely on turnover of the existing fleet of cars and trucks to gain those emission reductions. For example, emissions from diesel engines are predicted to be reduced by 80 percent from 2000 levels. However, that level of reduction will not be occur until 2030 because they are tied to turnover of the fleet. A similar time period is at issue with the Federal plan to control utility emissions. Emissions from powerplants are projected to be reduced by 70 percent from 2003 levels. However, those reductions will not be achieved until after 2015 due to the phased-in approach contemplated under the rules.

Ohio EPA understands and supports the need to balance the economic costs of these reductions by phasing them in over time. However, U.S. EPA failed to take into account the need for balance when it established the deadlines for meeting the ozone standard. While the emission reductions mandated by U.S. EPA for utilities and vehicles are on a 10- to 25-year schedule, the States must meet the new standard in most areas no later than 2010, 5 years from now.

The Federal air pollution programs for vehicles and utilities will account for major reductions and will aid the States in complying with the 8-hour ozone standard. But because of the short deadlines established by U.S. EPA for States to reach the 8-hour ozone standard, the benefits of those reductions will be too late to avoid mandatory local controls that will, by comparison, do little to reduce ozone. The reductions will also be too late for areas like Northeast Ohio to avoid Federal sanctions for failing to meet its designated deadline for compliance. These sanctions and mandated local controls will have significant and unnecessary consequences on Northeast Ohio's economy.

So what is the appropriate solution? EPA should have adjusted the attainment dates so States can take full advantage of these Federal programs. All nonattainment areas are not faced with the same dilemma. Most basic areas have a realistic and fair chance of meeting their 2009 deadline. But most moderate nonattainment areas have no chance of meeting their 2010 deadline. Ohio EPA believes these areas should be provided relief. We are not advocating for doing nothing more to improve air quality in these areas, but rather an appropriate balance be struck between the length of time provided to comply and a reasonable number of new cost effective pollution control programs that will help accelerate compliance.

I would like to thank Senator Voinovich for holding this hearing on such a critically important issue to the States. Ohio stands ready and willing to engage in discussion that would lead to a practical solution that strikes the right balance between improved air quality and the economic costs of compliance.

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