United States Environmental Protection Agency
Office of Air and Radiation

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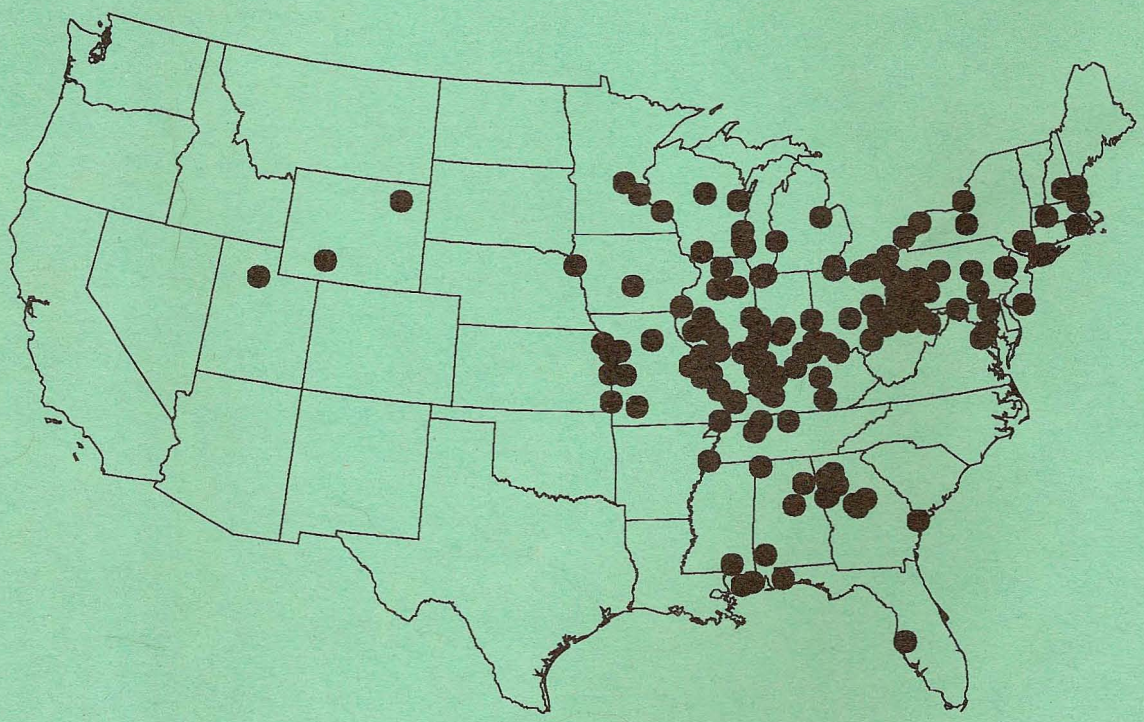
1996 Compliance Report

ACID RAIN PROGRAM



Plants Affected by Phase I of the Acid Rain Program in 1996

BACKGROUND

The Acid Rain Program was established under Title IV of the 1990 Clean Air Act Amendments. The program calls for major reductions of sulfur dioxide (SO_2) and nitrogen oxides (NO_x), the pollutants that cause acid rain, while establishing a new approach to environmental protection through the use of market incentives. The program sets a permanent cap on the total amount of SO_2 that may be emitted by electric utilities nationwide at about one half of the amount emitted in 1980, and allows flexibility for individual utility combustion units to select their own methods of compliance. The program also sets NO_x emission limitations (in lb/mmBtu) for coal-fired electric utility units, representing about a 27 percent reduction from their 1990 levels. The Acid Rain Program is being implemented in two phases: Phase I began in 1995 for SO_2 and 1996 for NO_x, and will last until 1999; Phase II for both pollutants begins in 2000 and is expected to involve over 2,000 units. In 1996, there were 431 units affected by the SO_2 provisions of the Acid Rain Program, 223 of which were also affected for NO_x, and an additional 16 utility units affected only by the NO_x provisions.

Acid rain causes acidification of lakes and streams and contributes to the damage of some trees at high elevations. In addition, acid rain accelerates the decay of building materials, paints, and cultural artifacts, including irreplaceable buildings, statues, and sculptures. While airborne, SO_2 and NO_x gases and their particulate matter derivatives, sulfates and nitrates, contribute to visibility degradation and impact public health.

The SO_2 component of the Acid Rain Program represents a dramatic departure from traditional command and control regulatory methods that establish source-specific emission limitations. Instead, the program introduces a trading system for SO_2 that facilitates lowest-cost emission reductions and an overall emissions cap that ensures the maintenance of the environmental goal. The program features tradable SO_2 emissions allowances, where one allowance is a limited authorization to emit one ton of SO_2. Allowances may be bought, sold, or banked by utilities, brokers, or anyone else interested in holding them. Existing utility units were allocated allowances for each future compliance year, and all participants of the program are obliged to surrender to EPA the number of allowances that correspond to their annual emissions.

The NO_x component of the Acid Rain Program is more traditional, and establishes an emission rate limit for all affected utility units. Flexibility is introduced to this command-and-control measure, however, through compliance options such as emissions averaging, whereby a utility can meet the standard emission limitation by averaging the emission rates of two or more boilers. This allows utilities to over-control at units where it is technically easier or more economical to control emissions, thereby achieving reductions at a lower cost.

At the end of each year, utilities must demonstrate compliance with the provisions of the Acid Rain Program. For the NO_x portion of the program, utilities must achieve an annual emission rate limitation at or below mandated levels. For SO_2, utilities are granted a 30-day grace period during which additional SO_2 allowances may be purchased, if necessary, to cover each unit's emissions for the year. At the end of the grace period (the Allowance Transfer Deadline), the allowances a unit holds in its Allowance Tracking System (ATS) account must equal or exceed the unit's annual SO_2 emissions. In addition, in 1995-1999 (Phase I of the program), units must have sufficient allowances to cover certain other deductions as well. Any remaining SO_2 allowances may be sold or banked for use in future years.

TO THE READER:

The 1996 Compliance Report highlights the progress under EPA's Acid Rain Program during the first year of compliance with the NO_x program and the second year with the SO_2 program. Affected facilities demonstrated 100 percent compliance for both pollutants and even exceeded the compliance targets set by the Clean Air Act Amendments of 1990. With respect to NO_x, affected utility units reduced emission rates by an average of 40 percent below 1990 levels, emitting 33 percent less NO_x in the process, and demonstrating an average of 18 percent overcompliance with the regulations. For SO_2, utilities nearly matched their extraordinary overcompliance of 1995 with emissions that were 35 percent below 1996 allocated levels.

The Acid Rain Program is unique in that it embodies two different types of pollution control systems, one market-based cap and trade, and one command and control. Though both have been very successful in 1996, the more flexible SO_2 trading program has resulted in greater reductions relative to compliance goals than the NO_x emission rate limitation. There are many differences between the programs that must be taken into account in any comparison, but the environmental benefit of the earlier and relatively greater reductions achieved with SO_2 are a lesson in the environmental effectiveness of properly structured market-based programs.

The early success of SO_2 trading under the Acid Rain Program has enabled EPA to assist in the development of other programs seeking to implement trading to achieve environmental goals at lower costs. For example, EPA is acting as a consultant to assist the northeastern states of the Ozone Transport Commission in the development of a cap and trade system for NO_x that will facilitate compliance with the National Ambient Air Quality Standard for ozone.

Internally, the Acid Rain Program is working to further streamline procedures and expand access to information. One such effort is the development of electronic transfer capability for SO_2 allowances to save the time and resources of market participants. Another mechanism is the creation of automated electronic feedback to submissions of quarterly emissions reports from utilities in order to expedite the processing of emissions data. In addition, the Acid Rain Program is making every effort to convey accurate and timely program information to the interested public. This information includes everything from weekly updates on the SO_2 allowance market to quarterly emissions information. All our data is available on our frequently updated home page at http://www.epa.gov/acidrain.

In the coming year, EPA will continue to monitor and report the results of Acid Rain Program implementation. We look forward to continued good news.

Brian J. McLean
Director, Acid Rain Program

SUMMARY

100 Percent Compliance for both SO_2 and NO_x in 1996

Of the more than 2,000 utility boilers and combustion turbines (referred to as "units") currently operating in the U.S., all 445 units affected by the SO_2 and NO_x regulations of Phase I of the Acid Rain Program in 1996 successfully met their emissions compliance obligations.

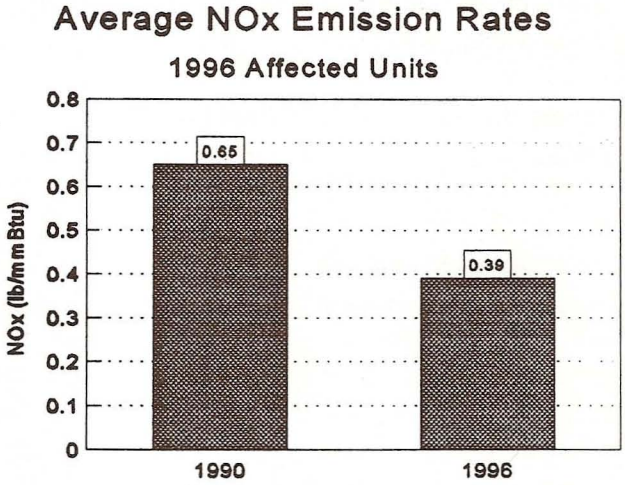
All 431 units subject to SO_2 requirements in 1996 held sufficient allowances to cover their emissions. The 5,453,028 allowances deducted from compliance accounts represent approximately 65 percent of all 1996 allowances issued and 45 percent of all 1995 and 1996 allowances that were available for compliance. Almost all of the deducted allowances (5,433,351, or 99 percent) were for emissions, but other deductions were also made as required by the Acid Rain regulations.

All 239 units subject to the NO_x requirements in 1996 demonstrated compliance with applicable annual emission limitations. Two hundred twenty three of these units were also subject to SO_2 requirements, while 16 units were affected only for NO_x.

1996 SO_2 Emissions of Phase I Units were 35 Percent Below Allowable Level

SO_2 emissions in 1996 were 2.9 million tons (or 35 percent) below the 8.3 million ton allowable level as determined by 1996 allowance allocations. Since an additional 3.4 million allowances were carried over, or banked, from 1995, the overall number of allowances available in 1996 was 11.7 million, of which affected units exhausted only about 45 percent. Actual emissions for the 431 units participating in 1996, measured by continuous emission monitoring systems (CEMS), were 5.4 million tons, up approximately 100,000 tons from emissions of the 445 units affected in 1995.

1996 NO_x Emission Rates of Phase I Units were 40 Percent Lower Than in 1990; NO_x Tons Down 33 Percent



The results are impressive for the first year of compliance with Phase I NO_x regulations. In reducing emission rates 18 percent below the required level in 1996, Phase I utility units on average dropped their emission rates by 40 percent below 1990 levels; from an average of 0.65 pounds of NO_x per million Btu of heat input (lb/mmBtu) to an average of 0.39 lbs/mmBtu. Compliance with the applicable emission rates at the 239 affected units for 1996 resulted in emission levels approximately 340,000 tons (or 33 percent) below 1990 levels.

Monitoring Performance Excellent Once Again

The continuous emission monitors used by participants in the Acid Rain Program continue to provide some of the most accurate data ever collected by the EPA. For the second year of the program, these monitors were demonstrated to be accurate and their availability was excellent. Statistics reflect monitor operation of the entire universe of utility units affected by both Phase I and Phase II of the program.

Accuracy:	98 percent of the installed and tested monitors met the required relative accuracy standards on the first attempt, while the remaining two percent met the standards following monitor adjustments; SO_2 monitors achieved a median relative accuracy (i.e., deviation from the reference test method) of 3.3 percent; flow monitors, 3.5 percent; and NO_x monitors, 3.3 percent.
Availability:	SO_2 and flow monitors achieved a median availability of 99.0 and 99.2 percent, respectively, while NO_x monitors achieved a median availability of 98.5 percent.

SO_2 Market Active; Volume of Allowances Transferred Between Distinct Entities More Than Doubles from 1995

Activity in the allowance market continued to increase in 1996. The volume of allowances transferred between unrelated parties in economically significant trades more than doubled from 1.9 million in 1995 to 4.4 million in 1996. More than 50 percent of Phase I affected utility companies have already engaged in a significant trade with an economically distinct utility, broker, or fuel company.

In mid-1995, the average price of an allowance was about $130. By the EPA's annual auction in March of 1996, the market price of a current vintage year allowance had fallen to $68, partially in response to the low costs of compliance encountered in 1995. Also a factor in the low allowance price was the vast overcompliance and the resulting substantial bank of allowances. By the end of 1996, however, prices had climbed back up into the $90 range and by April, 1997 had reached $115, only to decline again to the $90 - 100 range in May 1997.

1996 COMPLIANCE REPORT

EPA is pleased to report that all affected boilers and combustion turbines (units) have complied with the Acid Rain Program in 1996, the second year of Phase I requirements for SO_2 and the first year of Phase I emission limitations for NO_x. All Phase I SO_2 units complied with the requirement to hold enough allowances to cover their emissions, and all Phase I NO_x sources met the annual emission rate required by the Clean Air Act Amendments (CAAA) of 1990.

Exhibit 1 provides a summary of the affected population of units under the Acid Rain Program from 1995 through 1999. The table illustrates that although the units listed in Table 1 of the CAAA are consistently affected for both SO_2 and NO_x beginning in 1997, the total universe of affected units varies year to year because of the flexibility offered by the program.

Exhibit 1
Affected Units During Phase I of the Acid Rain Program

		1995	1996	1997	1998	1999
SO_2	Table 1	263	263	263	263	263
	Substitution and Compensating	182	161	Variable	Variable	Variable
	Opt-in	0	7	Variable	Variable	Variable
	TOTAL	***445***	***431***	***Variable***	***Variable***	***Variable***
NO_x	Table 1	NA	144	170	171	171
	Substitution	NA	95	95	95	95
	Early-Election	NA	NA	Variable	Variable	Variable
	TOTAL	***NA***	***239***	***Variable***	***Variable***	***Variable***

This report discusses the process and results of determining compliance for these Phase I affected units. Detailed appendices provide information on 1996 emissions and utilization for both SO_2 and NO_x affected sources, allowance holdings and deductions for SO_2 sources, and explanations of averaging plans and compliance flexibility and requirements for NO_x sources.

SO_2 PROGRAM

431 Units Underwent Annual Reconciliation for SO_2 in 1996

There were 424 affected utility units and seven opt-in units that underwent annual reconciliation in 1996 to determine whether sufficient allowances were held to cover emissions. These 431 units are listed in Appendix A and include 263 utility units specifically required to participate during Phase I, 161 utility units not initially required to participate until Phase II, but electing to participate early as part of multi-unit compliance plans, and seven other units that elected to join as part of the Opt-in Program.

The core 263 utility units, residing at 110 power plants, were selected by Congress in the 1990 Amendments to the Clean Air Act because they were the highest emitting and largest units. These units emitted 57 percent of all utility emissions in 1985, and had emission rates ranging from 2.5 to 10.2 lbs of SO_2/mmBtu of heat input, with an average of 4.2 lbs/mmBtu. These units are often referred to as "Table 1 units" because they are officially listed in Table 1 of the allowance allocation regulation, 40 CFR 73.10.

An additional 161 utility units affected in 1996 have been designated by certain Table 1 units to serve either as substitution or compensating units. A unit brought into Phase I as a substitution unit can assist a Table 1 unit in meeting its emissions reduction obligations. A unit brought into Phase I as a compensating unit can provide compensating generation to account for a Table 1 unit that reduced its utilization below its baseline. Appendix B-1 contains a more detailed explanation of substitution and compensating units, and Appendix B-2 delineates the relation of these units to their Table 1 counterparts. In 1996, there were 160 substitution units and one compensating unit designated.

New this year is the addition of seven opt-in units that entered the program in July. The Opt-in Program gives sources not required to participate in the Acid Rain Program the opportunity to enter the program on a voluntary basis, install continuous emission monitoring systems (CEMS), reduce their SO_2 emissions, and receive their own allowances.

In 1996, there were 14 fewer units undergoing annual reconciliation than in 1995. The change in number of units affected by the Phase I SO_2 provisions is due to the entry and exit of units in accordance with substitution and compensating plans of one or more of the original 263 Table 1 units and the entry of opt-in sources. In 1995, there were 182 substitution and compensating units, whereas in 1996, the number fell to 161, and seven opt-in units were added to the program.

1996 SO_2 Emissions Target was 8.3 Million Tons

The number of allowances allocated in a particular year, the amount representing that year's allowable SO_2 emissions level, is the sum of allowance allocations granted to sources under several provisions of the Act. In 1996, the emissions target established by the program for the 431 participating units was 8.3 million tons. However, the total allowable SO_2 emission level in 1996 was actually 11.7 million tons, consisting of the 8.3 million 1996 allowances granted through the program and an additional 3.4 million allowances carried over, or banked, from 1995.

The initial allocation and the allowances for substitution and compensating units represent the basic allowances granted to units that authorize them to emit SO_2 under the Acid Rain Program. Additional allowances for the year 1996 were also made available through the allowance auctions, held annually since 1993. Other allowances issued in 1996 were from bonus provisions in the Act, which are briefly explained in Exhibit 2 on the following page. In addition, any allowances carried over from previous years (banked allowances) are available for compliance and included in the allowable total.

Exhibit 2
Origin of 1996 Allowable Emissions Level

Type of Allowance Allocation	Number of Allowances	Explanation of Allowance Allocation Type
Initial Allocation	5,550,789	Initial Allocation is the number of allowances granted to units based on their historic utilization, emissions rates specified in the Clean Air Act and other provisions of the Act.
Phase I Extension	1,336,735	Phase I Extension allowances are given to Phase I units that reduce their emissions by 90 percent or reassign their emissions reduction obligations to units that reduce their emissions by 90 percent.
Allowances for Substitution Units	1,160,342	Allowances for Substitution Units are the initial allocation granted to Phase II units which entered Phase I as substitution units.
Allowance Auctions	150,000	Allowance Auctions provide allowances to the market that were set aside in a Special Allowance Reserve when the initial allowance allocation was made.
Allowances for Compensating Units	15,085	Allowances for Compensating Units are the initial allocation granted to Phase II units which entered Phase I as compensating units.
Opt-in Allowances	48,499	Opt-in Allowances are provided to units entering the program voluntarily.
Small Diesel Allowances	29,411	Small Diesel Allowances are allocated annually to small diesel refineries that produce and desulfurize diesel fuel during the previous year. These allowances can be earned through 1999.
Conservation Allowances	5,687	Conservation Allowances are awarded to utilities that undertake efficiency and renewable energy measures. The allowances come from a special Conservation and Renewable Energy Reserve set aside when the initial allowance allocation was made.
TOTAL 1996 ALLOCATION	**8,296,548**	
BANKED 1995 ALLOWANCES	3,435,789	Banked Allowances are those held over from 1995 and can be used for compliance in 1996 or any future year.
TOTAL 1996 ALLOWABLE	**11,732,337**	

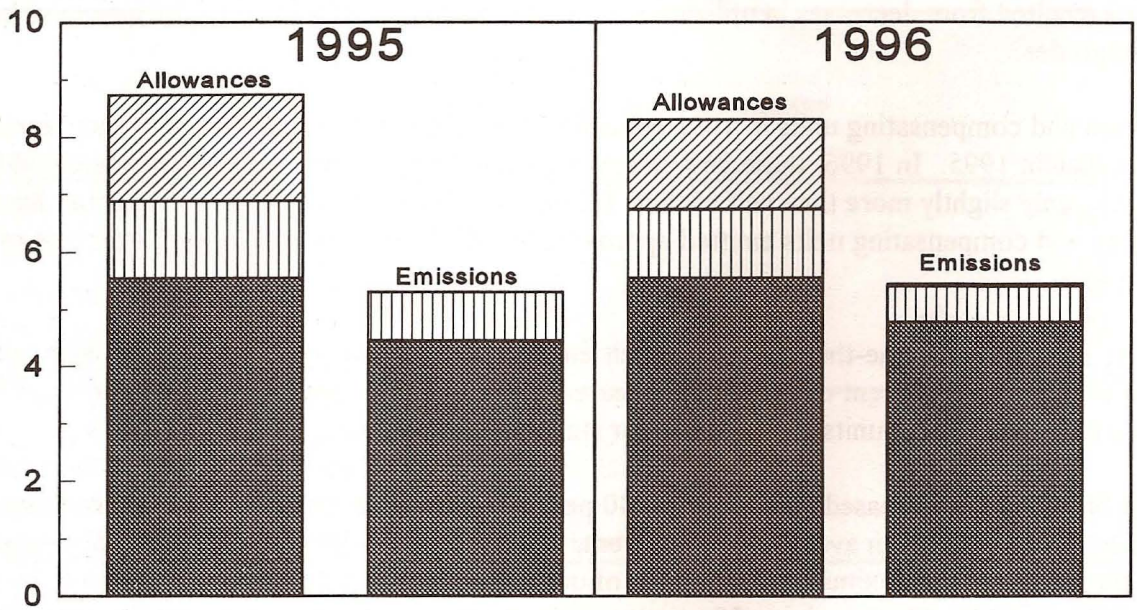
Beginning in the year 2000 at the onset of Phase II, the volume of allowances allocated annually to the Phase I units will be reduced and the requirement to hold allowances will be extended to smaller, cleaner plants. Nationwide, the cap for all utilities with an output capacity of greater than 25 megawatts will be 9.48 million allowances from 2000-2009. In 2010, the cap will be reduced further to 8.95 million allowances, a level approximating one half of industry-wide emissions in 1980.

SO_2 COMPLIANCE RESULTS

Phase I Units Better 1996 SO_2 Allowable Emissions Level by 35 Percent

Despite an increase in emissions after the significant overcompliance of 1995, the Phase I affected units of 1996 still emitted at a level approximately 35 percent below 1996 allocations, as shown in Exhibit 3. These units combined to emit 5.4 million tons of SO_2, expending only about 45 percent of the 11.7 million allowances available in 1996. Appendix B-3 reports the 1996 emission and utilization levels for all Phase I affected units, as well as a comparison to these levels in 1995.

Exhibit 3
Summary of SO_2 Emissions versus Allocations
(Millions of Tons)



	'95 Allocation	'95 Emissions	'96 Allocation	'96 Emissions
Table 1 Units	5.55	4.45	5.55	4.77
S & C Units*	1.33	0.85	1.18	0.63
Other**	1.86	0.00	1.57	0.04
TOTALS	8.74	5.30	8.30	5.44

* There were 182 subsitution and compensating units and 1995 and 161 such units in 1996.
** The source of the "other" emissions in 1996 is the 7 opt-in units for 7/1/96 - 12/31/96. The "other" allocations in both years consist of Phase I Extension, opt-in, small diesel, conservation and annual auction allowances.

Relative to 1995, the 263 Table 1 units increased their emissions by approximately 315,000 tons, or 7 percent in 1996, while increasing their utilization by 4 percent. However, the 4.8 million tons emitted by these Table 1 units were still substantially below their 1996 allocation of 5.6 million tons.

The majority of Table 1 units (54 percent) increased their emissions relative to 1995 by an average of 7,300 tons. Most of the remaining Table 1 units decreased their emissions in this time frame by an average of 5,500 tons from 1995 levels. The remaining eight Table 1 units maintained the same zero emission level of 1995.

In terms of utilization, more than one-third of Table 1 units decreased their levels by an average of 16 percent. The remaining 159 units, however, maintained or exceeded 1995 utilization levels, with an average increase of approximately 34 percent.

Table 1 units were responsible for both the largest increases *and* decreases in emissions between 1995 and 1996. Review of the largest emission increases in this time frame reveals that increased utilization seems to be at least a contributing factor, if not the sole factor, for most of these increases. At several units, for example, the rise occurred due to increased utilization coupled with the use of higher sulfur coal in response to the market providing this coal (and allowances) less expensively. Another case reflects a utilization increase coupled with scrubber difficulties, resulting in lower removal efficiencies than in 1995. A final case where a substantial increase in emissions occurred is due solely to a utilization increase; the unit underwent an extended outage in 1995, but operated throughout 1996.

Similar review of the largest decreases in emissions in 1996 relative to 1995 reveals that scrubber installation or increased scrubber use were behind several of the drops. The remainder of the biggest reductions resulted from decreases in utilization, caused in some cases by outages for maintenance or control upgrades.

Substitution and compensating units in 1996 expended a sizeably smaller percentage of their annual allocation than in 1995. In 1996, these 161 units were responsible for emitting approximately 630,000 tons of SO_2, only slightly more than half of their 1.2 million allocation. In 1995, on the other hand, 183 substitution and compensating units emitted approximately 850,000 tons of SO_2, or 65 percent of their allowable level.

Of the 161 units in 1996, one-third increased their emissions relative to 1995 levels by an average of 1,300 tons. Almost 40 percent of the units decreased their emissions, reducing by an average of 1,500 tons. The remainder of the units maintained their status as zero emitters.

The level of utilization increased for more than 40 percent of substitution and compensating units between 1995 to 1996, by an average of 36 percent. These increases ranged from less than one percent to over 200 percent. Approximately 35 percent of units experienced a decrease in utilization, by an average of 26 percent. The remaining 20 percent of substitution and compensating units maintained utilization levels of zero.

Opt-in units received 48,499 allowances in 1996 as a reflection of their baseline emissions levels, but contributed only 37,000 tons to 1996 emission levels. These numbers represent operations beginning July 1.

Deducting Allowances for Compliance

The total number of allowances deducted in 1996 was 5,453,028, which represents approximately 65 percent of all 1996 allowances issued. Almost all (99.6 percent) of the deducted allowances were for emissions. Exhibit 4 on the following page displays these allowance deductions, as well as the remaining bank of 1995 and 1996 allowances.

At an individual unit, the number of allowances surrendered was equal to the number of tons emitted at the unit, except where the unit shared a common stack with other units. For the purposes of

surrendering allowances for emissions at a common stack, the utility was allowed to choose the proportion of allowances deducted from each unit sharing the stack, as long as enough allowances were surrendered to cover the total number of tons emitted. If no apportionment was made, EPA deducted allowances equally among the units sharing the stack to cover total emissions reported by the stack. Appendix B-4 reflects the deductions for emissions at each unit after the common stack apportionment was made. Units sharing a common stack are listed directly under the entry for their common stack.

In 1996, Phase I units had a total of 5,433,351 allowances deducted for emissions. Of the 431 units, Paradise Unit 3 in Kentucky once again surrendered the most allowances for emissions (146,291), while emitting 6 percent fewer tons than in 1995. Fifty units were not operated at all during the year and surrendered no allowances. Half of the units surrendered 6,786 allowances or less, while the average number of allowances deducted at a unit was 12,606.

The remaining 0.4 percent (19,677) of allowance deductions were made for underutilization and state caps, which are explained in detail in Appendix B-5.

Exhibit 4
SO_2 Allowance Reconciliation Summary

Total Allowances Held in Accounts as of 1/30/97 (1995 and 1996 Vintage)*	**11,732,337**
Table 1 Unit Accounts	7,687,094
Substitution & Compensating Unit Accounts	1,244,952
Opt-in Accounts	44,050
Other Accounts**	2,756,241
1996 Allowances Deducted for Emissions	**5,433,351**
Table 1 Unit Accounts	4,765,251
Substitution & Compensating Unit Accounts	630,810
Opt-in Unit Accounts	37,290
1996 Allowances Deducted Under Special Phase I Provisions***	**19,677**
Table 1 Unit Accounts	3,178
Substitution & Compensating Unit Accounts	12,093
Opt-in Unit Accounts	4,406
Banked Allowances	**6,279,309**
Table 1 Unit Accounts	2,918,665
Substitution & Compensating Unit Accounts	602,049
Opt-in Unit Accounts	2,354
Other Accounts**	2,756,241

* The number of allowances held in the Allowance Tracking System (ATS) accounts equals the number of 1996 allowances allocated (see Exhibit 2) plus the number of 1995 banked allowances. January 30, 1997 represents the Allowance Transfer Deadline, the point in time at which the 1996 Phase I affected unit accounts are frozen and after which no transfers of 1996 allowances will be recorded. The freeze on these accounts is removed when annual reconciliation is complete.

** Other accounts refers to general accounts within the ATS that can be held by any utility, individual or other organization, and unit accounts for units not affected in Phase I.

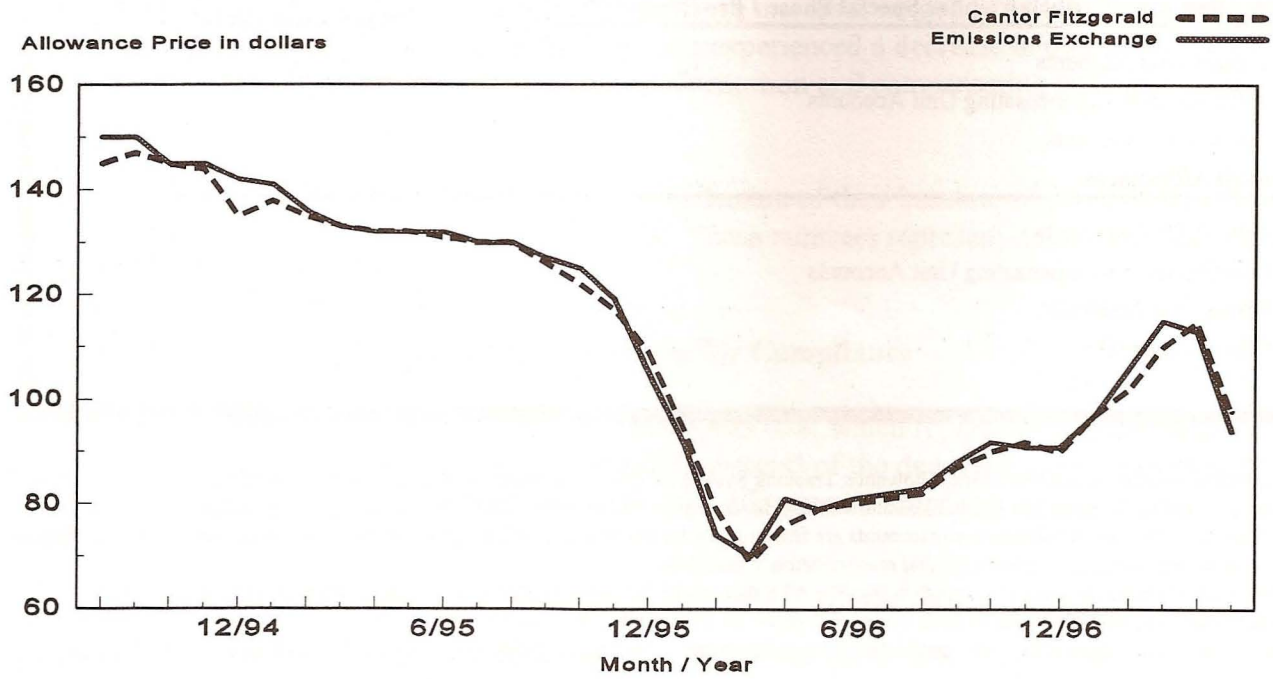
***Allowances were deducted for both underutilization and state cap provisions in 1996 (see Appendix B-5 for a thorough explanation).

Compliance Flexibility and the SO_2 Allowance Market

The flexibility provided by the Acid Rain Program enabled the 431 units affected in 1996 to pursue a variety of compliance options to meet their SO_2 reduction obligations, including scrubber installation, fuel switching, energy efficiency, and allowance trading. The presence of the allowance market has given some sources the incentive to overcontrol their SO_2 emissions in order to bank their allowances for use in future years. Other sources have been able to postpone and possibly avoid their expenditures for control by acquiring allowances from sources that overcontrolled. The flexibility in compliance options is possible because of the accountability provided through strict monitoring requirements for all affected units (described in the Monitoring section) that ensure one allowance is equivalent to one ton of SO_2. The program's flexibility enabled all 431 sources to be in compliance in 1996 and significantly reduced the cost of achieving these emissions reductions as compared to the cost of a technological mandate.

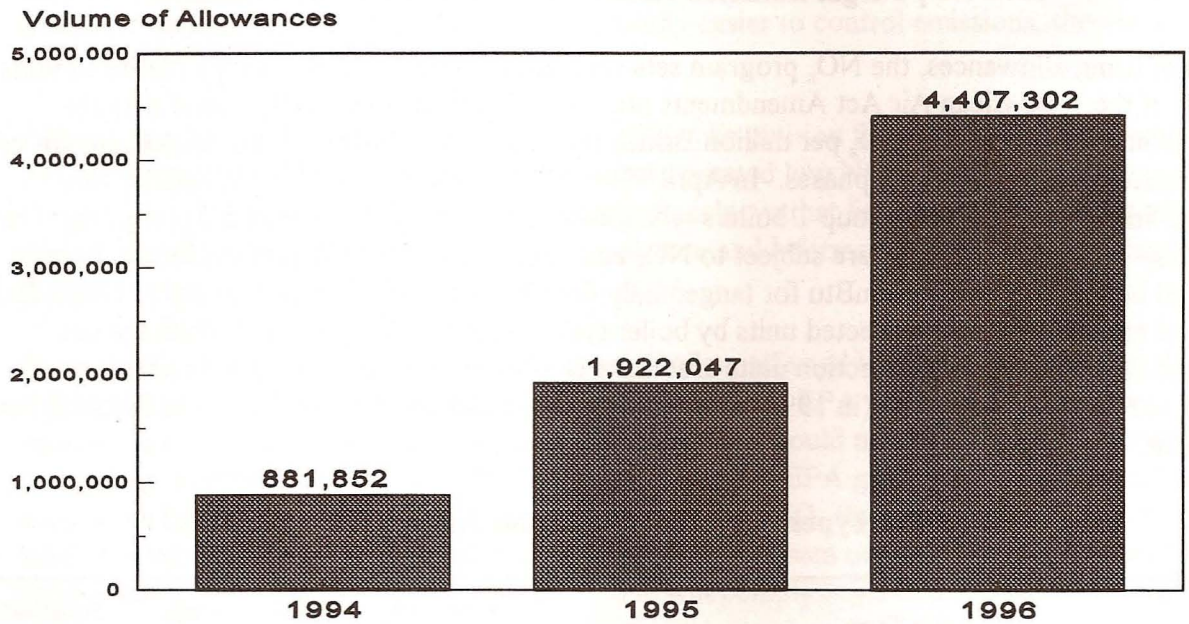
The marginal cost of reducing a ton of SO_2 from the utility sector should be reflected in the price of an allowance. The cost of reductions continues to be lower than anticipated when the Clean Air Act Amendments were enacted, and the price of allowances reflects this. The cost of compliance was initially estimated at $400-1000/ton, but dropped to a low of just $68/ton at the 1996 allowance auction. Following this low, however, the price of a current vintage year allowance climbed to $115 in April 1997, as the slightly higher emissions of 1996 relative to 1995 became apparent. In May, prices began to decline once again, and finished the month in the $90-100 range. Some market observers believe lower than expected allowance prices during the first two years of the program are due primarily to lower than expected compliance costs and larger than expected emission reductions, which have increased the supply of allowances and depressed prices. Exhibit 5 displays the price trend since mid-1994, based on monthly price reports from two brokerage firms, Emissions Exchange Corporation and Cantor Fitzgerald Environmental Brokerage Services.

Exhibit 5
SO_2 Allowance Prices



Activity in the allowance market created under the Acid Rain Program continued to grow in 1996. There were twice as many transactions in 1996 as in 1995, and the volume of allowances transferred rose significantly in every category, except that of reallocations, or accounting transfers, which hold little economic significance. In terms of economically significant transfers, or those between unrelated parties, the volume of allowances transferred more than doubled from 1.9 million in 1995 to 4.4 million in 1996, as shown in Exhibit 6. Already, more than 50 percent of Phase I affected utility companies in 33 different states have engaged in such a transfer with an economically distinct utility, broker, or fuel company. Growth is also evident in the subset of economically significant transfers representing only those allowances acquired by utilities (rather than all those exchanged by unrelated parties through the market); volume has increased by almost 130 percent from 700,000 allowances in 1995 to 1.6 million in 1996.

Exhibit 6
Volume of SO_2 Allowances in Economically Significant Transfers



EPA seeks to minimize transaction costs to parties trading allowances in the market by quickly and efficiently recording trades reported to the Agency in the Allowance Tracking System (ATS), the accounting system developed to track ownership of allowances. In 1996, EPA processed 83 percent of allowance transactions within 24 hours of receipt, up slightly from the 1995 rate of 81 percent. Ninety-nine percent were processed within 5 days. These transactions, along with data on account balances and ownership, are posted on the Acid Rain Division's Internet site (www.epa.gov/acidrain) on a weekly basis in order to better inform trading participants. Also available are cumulative market statistics and analysis.

NO_x PROGRAM

239 NO_x Affected Utility Units Underwent Verification of Emission Rates for 1996

There were 239 coal-fired utility units required to meet the Phase I emission limitations for NO_x in 1996. These affected units consist of "Group 1" boilers (dry bottom wall-fired boilers and tangentially fired boilers) affected by the Phase I SO_2 regulations in 1995. There were 115 dry bottom wall-fired boilers and 124 tangentially fired boilers affected in the first year of the program. These 239 affected units are listed in Appendix A and include 144 of the Table 1 units and an additional 95 of the substitution units brought into Phase I to aid in the SO_2 compliance obligation of one of the Table 1 units.[1] Sixteen of these 95 substitution units were affected by SO_2 regulations in 1995, but were no longer affected for SO_2 in 1996. Nevertheless, they remain affected for NO_x throughout Phase I, in accordance with the Clean Air Act. All 239 utility units affected by the NO_x program in 1996 will remain affected through the year 1999.

1996 NO_x Target Emission Rates were 0.50 and 0.45 lbs/mmBtu

Instead of using allowances, the NO_x program sets standard emission limitations on all affected units. Title IV of the 1990 Clean Air Act Amendments required EPA to establish NO_x annual average emission limits (in pounds of NO_x per million British thermal units, mmBtu, of fuel consumed) for coal-fired electric utility units in two phases. In April 1995, EPA established in 40 CFR Part 76 NO_x emission limits for units with Group 1 boilers which were also part of the Phase I SO_2 program. Units with Phase I, Group 1 boilers were subject to NO_x emission limits of 0.50 lb/mmBtu for dry bottom wall-fired boilers and 0.45 lb/mmBtu for tangentially fired boilers beginning on January 1, 1996. Exhibit 7 lists the number of Phase I affected units by boiler type. Note that early-election units are not presented in Exhibit 7. Early-election units are Phase II affected units that voluntarily commit to meeting the Phase I limits early (in 1997) in exchange for not needing to meet the lower Phase II limits until 2008.

Exhibit 7
Boiler Types Subject to NO_x Compliance in Phase I

Boiler Type	Standard Emission Limit	Table 1 Units Affected in 1996	Substitution Units
Tangentially fired Boilers	0.45	82	42
Dry Bottom Wall-fired Boilers	0.50	62	53

When the Phase I limits were established, EPA projected that they would result in annual reductions of NO_x mass emissions of approximately 400,000 tons from what emissions would have been without Title IV in each year of Phase I (1996 - 1999), and reductions of approximately 1,170,000 tons in year 2000 (the first year of Phase II compliance).

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[1]Of the original 263 Table 1 units, there are only 171 units with boilers classified as Group 1 (Group 2 are not affected until Phase II). Thus, the Phase I NO_x program affects only those 171 units. Of the 171 units, 27 units received a Phase I extension from NO_x compliance under either 40 CFR Part 72 or Part 76, leaving 144 Table 1 units affected in 1996.

In December, 1996, EPA established the second phase of NO_x emission limits for the remaining Phase II, Group 1 boilers and for cell burner, cyclones, wet bottom and vertically-fired boilers, referred to as "Group 2." These emission limitations go into effect on January 1, 2000. The December, 1996 regulation projected additional NO_x reductions of approximately 890,000 tons by the year 2000, increasing the total expected NO_x emission reductions under Title IV to a total of 2,060,000 tons annually after the year 2000.

Phase I NO_x Compliance Options

For each Phase I affected unit, a utility could comply with the applicable standard emission limitation indicated in Exhibit 7 (a level EPA has confirmed that most Group 1 boilers can achieve with commercially available technology), or may qualify for one of three additional compliance options which add flexibility to the rate-based compliance requirements:

- **Emissions Averaging**. A utility could meet the standard emission limitations by averaging the emission rates of two or more units. This approach, which can be elected each year, allows utilities to overcontrol at units where it is technically easier to control emissions, thereby achieving reductions at lower cost.

- **Alternative Emission Limitation (AEL)**. A utility can petition for a less stringent alternative emission limitation if it uses properly installed and operated low NO_x burner technology (LNBT) designed to meet the standard limit, but is unable to achieve that limit. EPA determines whether an AEL is warranted based on analyses of emissions data and information about the NO_x control equipment installed.

- **Phase I NO_x Extensions**. Utilities with Group 1 boilers affected in Phase I could qualify for two types of extensions from the Phase I NOx requirements: (1) EPA granted NO_x compliance extensions (extension period varies by unit) to utilities that could not install the necessary control technology in time to comply with 40 CFR Part 76; and (2) EPA granted NO_x compliance extensions for the year 1996 to utilities with units at which SO_2 flue gas desulfurization equipment was installed under SO_2 Phase I Extension Plans. Twenty seven units qualified for the above extensions. Of these, 25 will comply in 1997, one will comply beginning August 1997, and one will comply beginning in 1998.

Exhibit 8 on the following page presents a summary of the compliance options chosen by Phase I NO_x affected units for 1996.

Exhibit 8
Summary of Compliance Options Chosen

Compliance Option	# of Units
Standard Emission Limitation	46
Emissions Averaging	189
Alternative Emission Limitation[2]	4
SUBTOTAL	**239**
Phase I NO_x Extensions for Phase I Extension Units Installing Scrubbers	24
Part 76 Phase I NO_x Extension	3
TOTAL	266

Averaging is the most widely chosen compliance option. For 1996, utilities submitted 22 averaging plans involving 189 Phase I NO_x units. One hundred twenty-nine units in averaging plans are Table 1 units; sixty are substitution units. Of these, two averaging plans involved only units in common stack configurations within a single facility. For six plans involving 44 units, the averaging plan was not necessary to balance compliance among units: all units within the plan met their applicable emission limit individually. Appendix C-1 includes a list of 1996 averaging plans and Appendix C-2 includes a list of units with compliance extensions.

NO_x COMPLIANCE RESULTS

239 Utility Units Successfully Met the Target Emission Rates for NO_x in 1996

In 1996, all utilities subject to the Phase I NO_x emission limitations were in compliance, meaning that each of the 239 units was found to have met the required emission limit through one of the three compliance options. In fact, many individual units and averaging groups emitted at rates well below the emission limits, as shown in Exhibit 9. For a detailed list of the compliance approach and compliance assessment results for each individual unit see Appendix C-3. For a more detailed description of EPA's methodology for determining compliance with Phase I NO_x limits, see Appendix C-4.

[2]The four units identified under the Alternative Emission Limitation (AEL) option have not yet been granted a final limit. In 1996 they were in compliance with a temporary limit while demonstrating their lowest achievable NO_x level. In the future, if approved for a final AEL, they will be granted a permanent limit.

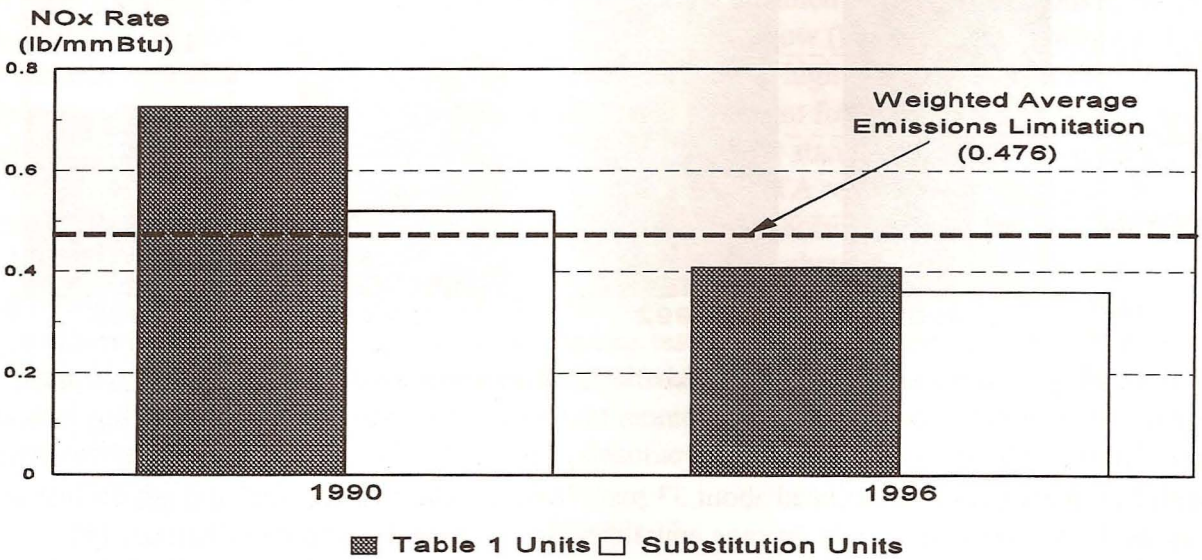
Exhibit 9
Annual Compliance Results in Relation to Allowable Emission Rate

Percent Below Applicable Emission Limitation	Units Subject to Standard Emission Limitation	Units Using Emissions Averaging	Units Subject to AEL Demonstration
0 - 10%	11	83	2
10% - 25%	19	67	1
More than 25%	16	39	1

NO_x Emission Rate Reduction

From 1990 to 1996, the affected population's average NO_x emission rate declined by 40 percent. As shown in Exhibit 10, on average, both Table 1 and substitution units were below the applicable average Phase I emission limit of 0.476 lb/mmBtu (the weighted average of the 0.50 lb/mmBtu limit for dry bottom wall-fired boilers and 0.45 lb/mmBtu for tangentially fired boilers).

Exhibit 10
Change in Average NOx Emission Rate from 1990 to 1996 for the 239 Affected Units

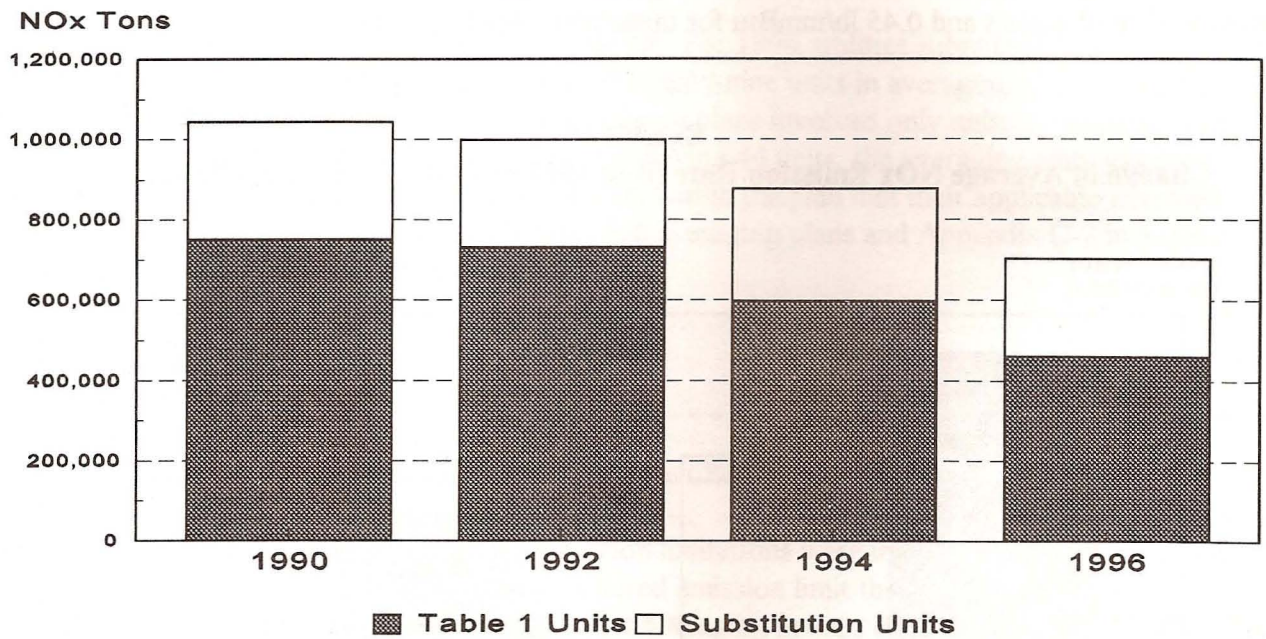


Reductions of NO_x Emissions from 1990 to 1996

Total NO_x emissions also declined from 1990[3] to 1996, but not as significantly. For the 144 Table 1 units affected in 1996 alone, NO_x emissions reductions between 1990 and 1996 totaled about 290,000 tons, or a 38 percent reduction. Including the 95 substitution units[4] with Group 1 boilers, the reductions increase to about 340,000 tons. For substitution units, NO_x reductions were approximately 51,000 tons, or 17.5 percent. The lower percentage of reductions for substitution units is probably attributable to the fact that many of these units were already lower emitters of NO_x than the Table 1 units; some, for example, had already been conforming to a New Source Performance Standard (NSPS) only moderately higher than the Phase I, Group 1 limits. In fact, in 1990, some of the substitution units were already below their applicable NO_x emission rate required by Title IV in 1996.

The graph in Exhibit 11 shows the emission reduction trend for Table 1 and substitution units, with significant NO_x reductions starting in 1994.

Exhibit 11
NO_x Emission Trends from 1990 through 1996 for the 239 Units



Although NO_x mass emissions declined about 33 percent from 1990 to 1996, they did not decline as much as the 40 percent reduction in average emission *rates* because the amount of fuel used to generate electricity during the same time frame increased by approximately 9 percent for Table 1 units

[3]The majority of the data used to calculate the baseline emission rate was short term data taken from relative accuracy tests performed to certify NO_x monitoring systems under Part 75. In cases where this data was not available, information from EPA's Air Docket No. A-95-28, utilities, the Utility Air Regulatory Group or EPA's National Allowance Database was used.

[4]Phase I NO_x units subject to emission limits because the utility elected to participate in the SO_2 reduction program by January 1, 1995.

and 10 percent for substitution units. Without further reductions in emission rates, NO_x emissions would be expected to rise with increased utilization.

SO_2 AND NO_x MONITORING IN 1996

In order to verify the reductions of SO_2 and NO_x emissions mandated under the Clean Air Act and to support the SO_2 allowance trading program, a fundamental objective of the Acid Rain Program is to ensure accurate accounting of pollutant emissions from affected utility boilers and turbines. To implement this objective, concentrations of emitted SO_2 and NO_x from each affected unit (boiler or turbine) are measured and recorded using Continuous Emissions Monitoring Systems (CEMS) (or an approved alternate measurement method) certified by EPA to meet the high accuracy standards of the Acid Rain Program.

CEMS are used to determine SO_2 mass emissions and NO_x emission rates. SO_2 mass emissions are determined using CEMS to measure SO_2 concentration and stack flow rate. NO_x emission rates, on the other hand, are determined with NO_x and diluent gas (CO_2 or O_2) concentration monitors. These monitors are required to meet strict initial and on-going performance standards to demonstrate the accuracy, precision, and timeliness of their measurement capability.

One measure of the accuracy of a CEMS is the relative accuracy test audit (RATA), which is required for initial certification of a CEMS and for on-going quality assurance. The relative accuracy test audit ensures that the installed monitor measures the "true" value of the pollutant by comparing the monitor to a reference method which simultaneously measures the stack gas pollutant. Thus, the lower the relative accuracy resulting from the test audit, the more accurate the monitor. All monitoring systems must meet a certain relative accuracy standard in order to be qualified to report emissions to the Acid Rain Program; 10 percent for SO_2 and NO_x, and 15 percent for flow (beginning January 1, 2000, the flow standard will also be 10 percent). As a further incentive for high quality maintenance, CEMS that achieve a superior accuracy result, less than or equal to 7.5 percent for SO_2 and NO_x and less than or equal to 10 percent for flow (beginning January 1, 2000, the flow standard for superior accuracy will also be 7.5 percent), are granted a reduced frequency annual RATA requirement in place of the semiannual requirement. Because the RATA determines relative accuracy as an absolute value, it does not detect whether the difference between the reference method values and the readings from the CEMS being tested is due to random error or to systematic bias. Therefore, an additional test is required to ensure that emissions are not underestimated: the bias test. This test determines if the CEMS is systematically biased low compared to the reference method and if so, a bias adjustment factor is calculated and applied to all reported data from that monitoring system to ensure there is no systematic underreporting. Exhibit 12 highlights the relative accuracy results achieved by Acid Rain CEMS in 1996.

Exhibit 12
1996 Relative Accuracy Test Audit (RATA) Results

	SO_2 Concentration	Volumetric Flow Rate	NO_x Rate
Mean Relative Accuracy	4.2%	4.3%	3.8%
Median Relative Accuracy	3.3%	3.5%	3.3%
Percent Meeting Relative Accuracy Standard	96%	99%	98%

Another metric used to determine the effectiveness of a CEMS is the percentage of hours that a monitoring system is operating properly and meeting all performance standards and therefore, able to record and report an emissions value. This metric is defined as the percent monitor availability (PMA). Exhibit 13 shows the monitor availabilities reported in 1996 and indicates that the CEMS used to determine SO_2 mass emissions and NO_x emission rates are well maintained and fulfilling the high performance standards required by the Acid Rain Program.

Exhibit 13
1996 CEMS Availability

Parameter	Median % Availability at End of 1996	
	Coal-Fired Units	Oil and Gas Units
SO_2	99.2	96.6
Flow	99.3	96.9
NO_x	98.9	97.1

CONCLUSION: A COMPARISON OF EMISSION REDUCTIONS

Both the Acid Rain Program's rate-based approach to NO_x reduction and cap-and-trade approach to SO_2 reduction have been very successful. In 1996, all 445 affected utility units not only met their compliance goals, but exceeded them, achieving an overall reduction of 340,000 tons of NO_x from 1990 levels despite an increase in generation, and maintaining the extraordinary reductions of more than 5 million tons of SO_2 from 1980 levels, first achieved in 1995.

Even though both systems were successful in terms of compliance, the 1996 results reveal one significant difference between the approaches for controlling SO_2 and NO_x: the level of overcompliance in NO_x emission rates for 1996 was not nearly as dramatic as the emissions reductions achieved for SO_2 in 1995 and 1996, as displayed in Exhibit 14.

Exhibit 14
Comparison of NO_x and SO_2 Compliance for Phase I Affected Units

	SO_2 Tons - 1995	SO_2 Tons - 1996	Average NO_x Rate
Allowable	8.7 million tons	8.3 million tons	0.476 lbs/mmBtu
Actual	5.3 million tons	5.4 million tons	0.39 lbs/mmBtu
% Over Control	40%	35%	18%

Exceedance of compliance goals translates into additional environmental and health benefits. For example, the greater and earlier reductions of SO_2 have been documented to result in a 10 - 25 percent drop in rainfall acidity in the Northeast in 1995[5], and health benefits as well.[6]

One factor mitigating the benefit of the overcompliance in the SO_2 program, of course, is the ability to use banked allowances in the future. The 40 percent of 1995 allowances and 35 percent of 1996 allowances that were not retired for compliance purposes can be used to cover emissions in a later year. However, immediate health and environmental benefits are arguably more valuable than a benefit several years from now.

The NO_x program, based on the more traditional rate-based approach, offers less flexibility and displays a lesser degree of overcompliance. It requires each unit to achieve reductions or, at a minimum, for a group of units to achieve an average emission rate equal to or lower than their individual limits. This approach does not allow emission reductions in one year to be used in another year, and as a result, the incentive to overcomply is diluted.

The pattern and certainty of emissions reductions over time will also differ between the two programs. After the year 2000 when both programs are in full implementation, SO_2 emissions are expected to decline steadily to the emissions cap level of 8.95 million tons, whereas NO_x emissions, in the absence of an emissions cap, are expected to rise as existing sources are utilized more and new sources, which are not required to offset their emissions, are built and operated.

Despite these differences, both the SO_2 and NO_x components of the Acid Rain Program have been very successful in 1996. The significant progress evident at this early stage of the program is encouraging. Through the continued efforts of Phase I participants and by additional reductions from Phase II units beginning in 2000, the long term goals of the Acid Rain Program -- a 10 million ton reduction of SO_2 emissions and two million ton reduction of NO_x emissions -- will be achieved.

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5 U.S. Geological Survey, Trends in Precipitation Chemistry in the United States, 1983-94 - An Analysis of the Effects in 1995 of Phase I of the CAAA of 1990, Title IV, USGS 96-0346, Washington, DC, June 1996.

6 US EPA, Human Health Benefits from Sulfate Reductions Under Title IV of the 1990 Clean Air Act Amendments, prepared by Hagler Bailly, Washington, DC, December 1995.

1996 COMPLIANCE REPORT: APPENDICES

Appendix A: Phase I Affected Units in 1996

The SO_2 Program

Appendix B-1: Substitution and Compensating Units in the SO_2 Program
Appendix B-2: Table 1 Units Designating Substitution and Compensating Units in 1996
Appendix B-3: Emissions and Utilization of Phase I Units, 1995 and 1996
Appendix B-4: Emissions and Allowance Holdings of Phase I Units
Appendix B-5: Compliance Deduction: An Explanation of Underutilization and State Cap Provisions

The NO_x Program

Appendix C-1: Summary List of Averaging Plan Population and Results
Appendix C-2: Table 1 NO_x Affected Units with Compliance Extensions for 1996
Appendix C-3: Compliance Requirements and Results for the 239 NO_x Affected Units in 1996
Appendix C-4: Description of NO_x Compliance Assessment Methodology

APPENDIX A: PHASE I AFFECTED UNITS IN 1996

ST	Plant Name	Stack/Unit ID	SO2	NOx
AL	Colbert	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓
		5	✓	✓
AL	E C Gaston	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓
		5	✓	✓
AL	Gadsden	1	✓	✓
		2	✓	✓
FL	Big Bend	BB01	✓	
		BB02	✓	
		BB03	✓	
		BB04	✓	✓
FL	Crist	4	✓	✓
		5	✓	✓
		6	✓	✓
		7	✓	
FL	Scholz	1	✓	✓
		2	✓	✓
GA	Arkwright	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓
GA	Bowen	1BLR	✓	✓
		2BLR	✓	✓
		3BLR	✓	✓
		4BLR	✓	✓
GA	Hammond	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓
GA	Harllee Branch	1	✓	
		2	✓	✓
		3	✓	
		4	✓	
GA	Jack Mcdonough	MB1	✓	✓
		MB2	✓	✓
GA	Kraft	1	✓	✓
		2	✓	✓
		3	✓	✓
GA	Mcintosh	1	✓	✓
GA	Mitchell	3	✓	✓
GA	Scherer	3		✓
GA	Wansley	1	✓	✓
		2	✓	✓
GA	Yates	Y1BR	✓	
		Y2BR	✓	✓
		Y3BR	✓	✓
		Y4BR	✓	✓
		Y5BR	✓	✓
		Y6BR	✓	✓
		Y7BR	✓	✓
IA	Burlington	1	✓	✓
IA	Des Moine	11	✓	
IA	George Neal North	1	✓	
IA	Milton L Kapp	2	✓	✓
IA	Prairie Creek	4	✓	✓
IA	Riverside	9	✓	✓
IL	Baldwin	1	✓	
		2	✓	
		3	✓	✓
IL	Coffeen	1	✓	
		2	✓	
IL	Collins	1	✓	
		2	✓	
		3	✓	
		4	✓	
		5	✓	
IL	Grand Tower	7	✓	✓
		8	✓	✓
		9	✓	✓

APPENDIX A: PHASE I AFFECTED UNITS IN 1996

ST	Plant Name	Stack/Unit ID	SO2	NOx
IL	Havana	1	✓	
		2	✓	
		3	✓	
		4	✓	
		5	✓	
		6	✓	
		7	✓	
		8	✓	
IL	Hennepin	1	✓	
		2	✓	✓
IL	Hutsonville	5	✓	✓
		6	✓	✓
IL	Joliet 9	5	✓	
IL	Joppa Steam	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓
		5	✓	✓
		6	✓	✓
IL	Kincaid	1	✓	
		2	✓	
IL	Meredosia	01	✓	✓
		02	✓	✓
		03	✓	✓
		04	✓	✓
		05	✓	✓
		06	✓	
IL	Newton	1	✓	✓
		2	✓	✓
IL	Vermilion	1	✓	✓
		2	✓	✓
IL	Wood River	1	✓	
IN	Bailly	7	✓	
		8	✓	
IN	Breed	1	✓	
IN	Cayuga	1	✓	✓
		2	✓	✓

ST	Plant Name	Stack/Unit ID	SO2	NOx
IN	Clifty Creek	1	✓	
		2	✓	
		3	✓	
		4	✓	
		5	✓	
		6	✓	
IN	Elmer W Stout	50	✓	✓
		60	✓	✓
		70	✓	✓
IN	F B Culley	2	✓	✓
		3	✓	✓
IN	Frank E Ratts	1SG1	✓	✓
		2SG1	✓	✓
IN	Gibson	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	
IN	H T Pritchard	3		✓
		4		✓
		5	✓	✓
		6	✓	✓
IN	Michigan City	12	✓	
IN	Petersburg	1	✓	✓
		2	✓	✓
		3		✓
		4		✓
IN	R Gallagher	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓
IN	Tanners Creek	U4	✓	
IN	Wabash River	1	✓	
		2	✓	✓
		3	✓	✓
		5	✓	✓
		6	✓	✓
IN	Warrick	1	✓	
		2	✓	
		3	✓	
		4	✓	

APPENDIX A: PHASE I AFFECTED UNITS IN 1996

ST	Plant Name	Stack/Unit ID	SO2	NOx
KS	La Cygne	1	✓	
		2		✓
KS	Quindaro	2	✓	✓
KY	Coleman	C1	✓	
		C2	✓	
		C3	✓	
KY	Cooper	1	✓	✓
		2	✓	✓
KY	E W Brown	1	✓	✓
		2	✓	
		3	✓	
KY	East Bend	2	✓	✓
KY	Elmer Smith	1	✓	
		2	✓	✓
KY	Ghent	1	✓	
KY	Green River	5	✓	✓
KY	H L Spurlock	1	✓	✓
KY	Hmp&L Station 2	H1	✓	
		H2	✓	
KY	Paradise	3	✓	
KY	R D Green	G1	✓	✓
		G2	✓	✓
KY	Shawnee	10	✓	
MA	Brayton Point	1	✓	
MA	Mount Tom	1	✓	
MD	C P Crane	1	✓	
		2	✓	
MD	Chalk Point	1	✓	
		2	✓	✓
		3	✓	
		4	✓	
MD	Morgantown	1	✓	
		2	✓	
MD	R P Smith	9	✓	✓
		11	✓	✓
MI	Dan E Karn	1	✓	
		2	✓	
MI	J C Weadock	7	✓	
		8	✓	
MI	J H Campbell	1	✓	✓
		2	✓	
		3	✓	
MI	J R Whiting	1	✓	
		3	✓	
MN	High Bridge	3	✓	✓
		4	✓	✓
		5	✓	✓
		6	✓	✓
MN	Sherburne County	1	✓	✓
		2	✓	✓
MO	Asbury	1	✓	
MO	Hawthorn	5	✓	✓
MO	Iatan	1		✓
MO	James River	3	✓	✓
		4	✓	✓
		5	✓	✓
MO	Labadie	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓
MO	Meramec	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓
MO	Montrose	1	✓	✓
		2	✓	✓
		3	✓	✓
MO	New Madrid	1	✓	
		2	✓	
MO	Rush Island	1	✓	✓
		2	✓	✓

APPENDIX A: PHASE I AFFECTED UNITS IN 1996

ST	Plant Name	Stack/Unit ID	SO2	NOx
MO	Sibley	1	✓	
		2	✓	
		3	✓	
MO	Sioux	1	✓	
		2	✓	
MO	Southwest	1	✓	✓
MO	Thomas Hill	MB1	✓	
		MB2	✓	
		MB3	✓	✓
MS	Jack Watson	4	✓	✓
		5	✓	✓
MS	R D Morrow	1	✓	✓
		2	✓	✓
MS	Victor J Daniel Jr	1		✓
		2	✓	✓
NH	Merrimack	1	✓	
		2	✓	
NH	Newington	1	✓	
NJ	B L England	1	✓	
		2	✓	
NY	Dunkirk	3	✓	✓
		4	✓	✓
NY	Greenidge	6	✓	✓
NY	Milliken	1	✓	✓
		2	✓	✓
NY	Northport	1	✓	
		2	✓	
		3	✓	
		4	✓	
NY	Oswego	4	✓	
		5	✓	
		6	✓	
NY	Port Jefferson	3	✓	
		4	✓	
NY	Roseton	1	✓	
		2	✓	

ST	Plant Name	Stack/Unit ID	SO2	NOx
OH	Acme	13	✓	
		14	✓	
		15	✓	
		16	✓	
		91	✓	
		92	✓	
OH	Ashtabula	7	✓	✓
OH	Avon Lake	9	✓	
		10	✓	
		11	✓	
		12	✓	
OH	Bay Shore	1	✓	
		2	✓	
		3	✓	
		4	✓	
OH	Cardinal	1	✓	
		2	✓	
OH	Conesville	1	✓	
		2	✓	
		3	✓	✓
		4	✓	✓
OH	Eastlake	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓
		5	✓	
OH	Edgewater	11	✓	
		12	✓	
		13	✓	✓
OH	Gen J M Gavin	1	✓	
		2	✓	
OH	Gorge	25	✓	✓
		26	✓	✓
OH	J M Stuart	1	✓	
		2	✓	
		3	✓	
		4	✓	
OH	Kyger Creek	1	✓	
		2	✓	
		3	✓	
		4	✓	
		5	✓	

APPENDIX A: PHASE I AFFECTED UNITS IN 1996

ST	Plant Name	Stack/Unit ID	SO2	NOx
OH	Lake Shore	18	✓	
		91	✓	
		92	✓	
		93	✓	
		94	✓	
OH	Miami Fort	5-1	✓	
		5-2	✓	
		6	✓	✓
		7	✓	
OH	Muskingum River	1	✓	
		2	✓	
		3	✓	
		4	✓	
		5	✓	
OH	Niles	1	✓	
		2	✓	
OH	Picway	9	✓	✓
OH	Poston	1	✓	
		2	✓	
		3	✓	
OH	R E Burger	1	✓	
		2	✓	
		3	✓	
		4	✓	
		5	✓	
		6	✓	
		7	✓	
		8	✓	
OH	Toronto	9	✓	
		10	✓	✓
		11	✓	✓
OH	W H Sammis	5	✓	✓
		6	✓	✓
		7	✓	
OH	Walter C Beckjord	5	✓	✓
		6	✓	✓
PA	Armstrong	1	✓	
		2	✓	✓
PA	Bruce Mansfield	1	✓	✓
		2	✓	✓
PA	Brunner Island	1	✓	✓
		2	✓	✓
		3	✓	✓
PA	Cheswick	1	✓	✓
PA	Conemaugh	1	✓	
		2	✓	
PA	Hatfield's Ferry	1	✓	
		2	✓	
		3	✓	
PA	Martins Creek	1	✓	✓
		2	✓	✓
		3	✓	
		4	✓	
PA	Mitchell	33	✓	✓
PA	New Castle	1	✓	✓
		2	✓	✓
PA	Portland	1	✓	✓
		2	✓	✓
PA	Shawville	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓
PA	Sunbury	3	✓	✓
		4	✓	✓
TN	Allen	1	✓	
		2	✓	
		3	✓	
TN	Cumberland	1	✓	
		2	✓	
TN	DuPont Johnsonville	JVD1	✓	
		JVD2	✓	
		JVD3	✓	
		JVD4	✓	
TN	Gallatin	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓

APPENDIX A: PHASE I AFFECTED UNITS IN 1996

ST	Plant Name	Stack/Unit ID	SO2	NOx
TN	Johnsonville	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓
		5	✓	✓
		6	✓	✓
		7	✓	✓
		8	✓	✓
		9	✓	✓
		10	✓	✓
UT	Gadsby	3		✓
WI	Alma	B4	✓	✓
		B5	✓	✓
WI	Edgewater	3	✓	
		4	✓	
WI	Genoa	1	✓	✓
WI	J P Madgett	B1	✓	✓
WI	Nelson Dewey	1	✓	
		2	✓	
WI	North Oak Creek	1	✓	
		2	✓	
		3	✓	
		4	✓	
WI	Port Washington	1	✓	✓
		2	✓	✓
		3	✓	✓
		4	✓	✓
		5	✓	✓
WI	Pulliam	5	✓	
		6	✓	
		7	✓	✓
		8	✓	✓
WI	Rock River	1	✓	
		2	✓	
WI	South Oak Creek	5	✓	✓
		6	✓	✓
		7	✓	✓
		8	✓	✓
WI	Valley	1		✓
		2		✓
		3		✓
		4		✓
WI	Weston	1	✓	✓
		2	✓	✓
		3		✓
WV	Albright	1	✓	✓
		2	✓	✓
		3	✓	✓
WV	Fort Martin	1	✓	
		2	✓	
WV	Harrison	1	✓	
		2	✓	
		3	✓	
WV	Kammer	1	✓	
		2	✓	
		3	✓	
WV	Mitchell	1	✓	✓
		2	✓	✓
WV	Mt Storm	1	✓	
		2	✓	
		3	✓	
WV	Peasants	1		✓
		2		✓
WV	Rivesville	7	✓	
		8	✓	
WV	Willow Island	2	✓	
WY	Jim Bridger	BW71	✓	✓
		BW72	✓	✓
		BW73	✓	✓
WY	Wyodak	BW91	✓	✓

APPENDIX B-1: SUBSTITUTION AND COMPENSATING UNITS IN THE SO_2 PROGRAM

During Phase I of the of the Acid Rain Program, a unit not originally affected until Phase II may elect to enter the program early as a substitution unit or a compensating unit to help fulfill the compliance obligations for one of the Table 1 units targeted by Phase I. In 1996, there were 160 substitution units and 1 compensating unit.

Substitution Units

A unit brought into Phase I as a substitution unit can assist a Table 1 unit in meeting its emissions reductions obligations. Utilities may make cost-effective emissions reductions at the substitution unit instead of at the Table 1 unit, achieving the same overall emissions reductions that would have occurred without the participation of the substitution unit. A Table 1 unit may designate a Phase II unit as a substitution unit only if both units are under the control of the same owner or operator. For 1996, 90 Table 1 units designated 160 Phase II units to be substitution units. These units are listed in Appendix B. Of the 90 Table 1 units, almost half were located in the Midwest (IL, IN, MI, MO, OH, WI) and almost a quarter in the South (AL, FL, GA, KY, MS), predominantly in Georgia, as was the case in 1995. In addition, a quarter of these Table 1 units designated substitution units that were located at the same plant. Relative to 1995, there were 11 substitution units added to Phase I in 1996 and 26 removed in accordance with the compliance plans of the corresponding Table 1 units.

Compensating Units

Table 1 units that reduce their utilization below their baseline may designate a compensating unit to provide compensating generation to account for the reduced utilization of the Table 1 unit. (A unit's baseline is defined as its heat input averaged over the years 1985-1987). A Table 1 unit may designate a Phase II unit as a compensating unit if the Phase II compensating unit is in the Table 1 unit's dispatch system or has a contractual agreement with the Table 1 unit, and the emissions rate of the compensating unit has not declined substantially since 1985. Initially, there were four compensating units in 1996. Three of these units, however, were "de-designated" due to state caps, which are explained in Appendix B-5. The one compensating unit remaining for 1996 is New England Power's Brayton Point Unit 1 in Massachusetts, which was designated by Ohio Edison's Edgewater Unit 13. Brayton Point 1 was also designated as a compensating unit in 1995, along with three other units at Brayton Point and an additional three at Salem Harbor, another New England Power plant.

APPENDIX B-2: TABLE 1 UNITS DESIGNATING SUBSTITUTION AND COMPENSATING UNITS IN 1996

Table 1 Units				Substitution Units		
State	Plant Name	Units		State	Plant Name	Units
AL	EC Gaston	5	→	AL	Gadsden	1,2
FL	Big Bend	BB01, BB02, BB03	→	FL	Big Bend	BB04
FL	Crist	7	→	FL	Crist	4,5
				FL	Scholz	1,2
GA	Bowen	1BLR	→	GA	Harllee Branch	1
GA	Bowen	2BLR	→	GA	Harllee Branch	2
GA	Bowen	3BLR	→	GA	Harllee Branch	3
GA	Bowen	4BLR	→	GA	Harllee Branch	4
GA	Hammond	1	→	GA	Arkwright	1
GA	Hammond	2	→	GA	Arkwright	2
GA	Hammond	3	→	GA	Arkwright	3
GA	Hammond	4	→	GA	Arkwright	4
GA	Jack Mcdonough	MB2	→	GA	Mitchell	3
GA	Yates	Y2BR	→	GA	Kraft	1
GA	Yates	Y3BR	→	GA	Kraft	2
GA	Yates	Y4BR	→	GA	Kraft	3
GA	Yates	Y5BR	→	GA	McIntosh	1
IL	Baldwin	2	→	WY	Jim Bridger	BW71,BW72,BW73
				WY	Wyodak	BW91
IL	Baldwin	3	→	IL	Havana	1,2,3,4,5,6,7,8
				IL	Wood River	1
IL	Hennepin	2	→	IL	Hennepin	1
IL	Kincaid	1,2	→	IL	Collins	1,2,3,4,5
				IL	Joliet 9	5
IL	Meredosia	5	→	IL	Meredosia	1,2,3,4,6
				IL	Hutsonville	5,6
				IL	Newton	1,2
				IL	Grand Tower	7,8

APPENDIX B-2: TABLE 1 UNITS DESIGNATING SUBSTITUTION AND COMPENSATING UNITS IN 1996

State	Plant Name	Units		State	Plant Name	Units
IL	Vermilion	2	→	IL	Vermilion	1
IN	Petersburg	1,2	→	IN	H T Pritchard	5
KY	Coleman	C1, C2	→	KY	R D Green	G1, G2
MD	C P Crane	2	→	MS	R D Morrow	1,2
MD	Chalk Point	1,2	→	MD	Chalk Point	4
MD	Morgantown	1,2	→	MD	Chalk Point	3
MI	J H Campbell	1,2	→	MI	Dan E Karn	1,2
				MI	J R Whiting	1,3
				MI	JH Campbell	3
				MI	JC Weadock	7,8
MN	High Bridge	6	→	MN	High Bridge	3,4,5
				MN	Sherburne County	1,2
MO	James River	5	→	MO	James River	3,4
				MO	Southwest	1
MO	Labadie	1,2,3,4	→	MO	Meramec	1,2,3,4
				MO	Rush Island	1,2
MO	Montrose	1,2,3	→	MO	Hawthorn	5
MO	Sioux	1,2		KS	La Cygne	1
MO	Sibley	3	→	MO	Sibley	1,2
MO	Thomas Hill	MB1, MB2	→	MO	Thomas Hill	MB3
MS	Jack Watson	5	→	MS	Victor J Daniel	2
NH	Merrimack	1,2	→	NH	Newington	1
				MA	Mount Tom	1
NY	Dunkirk	3,4	→	NY	Oswego	4,5,6
				NY	Roseton	1,2
NY	Northport	1,2,3	→	NY	Northport	4
OH	Ashtabula	7	→	OH	Acme	13,14,15,16,91,92
				OH	Lake Shore	18,91,92,93,94
				OH	Bay Shore	1,2,3,4
OH	Avon Lake	12	→	OH	Avon Lake	9,10

APPENDIX B-2: TABLE 1 UNITS DESIGNATING SUBSTITUTION AND COMPENSATING UNITS IN 1996

State	Plant Name	Units		State	Plant Name	Units
OH	Conesville	4	→	OH	J M Stuart	1,2,3,4
OH	Edgewater	13	→	OH	Edgewater	11,12
OH	Niles	1,2		OH	R E Burger	1,2,3,4
OH	R E Burger	5,6,7,8		OH	Gorge	25, 26
OH	W H Sammis	5,6,7		OH	Toronto	9,10,11
				PA	Bruce Mansfield	1,2
				PA	New Castle	1,2
OH	Miami Fort	7	→	KY	East Bend	2
OH	Picway	9	→	OH	Poston	1,2,3
PA	Armstrong	1	→	WV	Albright	1
PA	Armstrong	2	→	WV	Albright	2
PA	Hatfield's Ferry	3	→	PA	Mitchell	33
PA	Martin's Creek	1,2	→	PA	Martin's Creek	3,4
WI	Edgewater	4	→	WI	Edgewater	3
WI	Genoa	1	→	WI	Alma	B4, B5
				WI	J P Madgett	B1
WI	Nelson Dewey	1,2	→	WI	Rock River	1,2
WI	Pulliam	8	→	WI	Pulliam	5,6,7
				WI	Weston	1,2
WI	South Oak Creek	5	→	WI	Port Washington	1,2,3,4,5
WV	Albright	3	→	MD	R P Smith	9
WV	Fort Martin	2	→	MD	R P Smith	11
WV	Harrison	1	→	WV	Rivesville	7,8
WV	Harrison	3	→	WV	Willow Island	2
Table 1 Units				**Compensating Units**		
OH	Edgewater	13	→	MA	Brayton Point	1

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
AL	Colbert	CSCO14 (1, 2, 3, 4)		37,507		31,939		-14.85%	
AL	Colbert	1	Table 1		11,218,752		12,952,183		15.45%
AL	Colbert	2	Table 1		14,777,014		12,618,216		-14.61%
AL	Colbert	3	Table 1		12,558,560		10,114,184		-19.46%
AL	Colbert	4	Table 1		12,545,848		13,855,269		10.44%
AL	Colbert	5	Table 1	39,400	24,231,736	58,218	34,058,704	47.76%	40.55%
AL	E C Gaston	CS0CAN (1, 2)		15,532		22,028		41.82%	
AL	E C Gaston	1	Table 1		13,211,865		15,064,260		14.02%
AL	E C Gaston	2	Table 1		12,384,326		16,306,916		31.67%
AL	E C Gaston	CS0CBN (3, 4)		17,036		19,812		16.29%	
AL	E C Gaston	3	Table 1		15,654,771		14,032,114		-10.37%
AL	E C Gaston	4	Table 1		11,600,402		14,192,836		22.35%
AL	E C Gaston	5	Table 1	23,170	36,743,938	33,819	48,089,378	45.96%	30.88%
AL	Gadsden	1	Substitution	4,278	3,096,772	4,893	3,518,404	14.38%	13.62%
AL	Gadsden	2	Substitution	4,043	2,922,701	5,168	3,649,976	27.83%	24.88%
FL	Big Bend	CS001 (BB01, BB02)		71,421		76,818		7.56%	
FL	Big Bend	BB01	Table 1		31,440,408		31,111,381		-1.05%
FL	Big Bend	BB02	Table 1		31,053,170		31,794,469		2.39%
FL	Big Bend	XS23 (BB03, BB04)		19,711		19,081		-3.20%	
FL	Big Bend	BB03	Table 1		27,394,634		28,490,272		4.00%
FL	Big Bend	BB04	Substitution		31,933,590		35,141,092		10.04%
FL	Crist	4	Substitution	3,849	5,460,857	2,513	3,215,872	-34.71%	-41.11%
FL	Crist	5	Substitution	3,071	3,045,556	2,566	3,291,052	-16.44%	8.06%
FL	Crist	6	Table 1	9,678	13,987,547	13,304	16,798,233	37.47%	20.09%
FL	Crist	7	Table 1	18,352	26,191,935	14,853	17,764,345	-19.07%	-32.18%
FL	Scholz	1	Substitution	2,087	939,799	2,735	1,099,257	31.05%	16.97%
FL	Scholz	2	Substitution	2,561	1,185,473	3,186	1,316,280	24.40%	11.03%
GA	Arkwright	CS001 (1, 2, 3, 4)		3,134		4,386		39.95%	
GA	Arkwright	1	Substitution		598,922		815,186		36.11%
GA	Arkwright	2	Substitution		502,753		754,577		50.09%
GA	Arkwright	3	Substitution		731,829		920,206		25.74%
GA	Arkwright	4	Substitution		528,757		850,114		60.78%
GA	Bowen	1BLR	Table 1	32,617	40,189,922	34,032	44,244,090	4.34%	10.09%
GA	Bowen	2BLR	Table 1	39,641	48,181,454	36,655	47,089,666	-7.53%	-2.27%
GA	Bowen	3BLR	Table 1	42,137	52,104,185	46,269	61,120,578	9.81%	17.30%
GA	Bowen	4BLR	Table 1	46,258	57,205,135	40,205	52,430,313	-13.09%	-8.35%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
GA	Hammond	CS001 (1, 2, 3)		7,398		7,246		-2.05%	
GA	Hammond	1	Table 1		4,615,977		3,515,633		-23.84%
GA	Hammond	2	Table 1		2,407,951		2,751,274		14.26%
GA	Hammond	3	Table 1		2,687,402		3,572,759		32.94%
GA	Hammond	4	Table 1	14,297	18,893,171	14,364	19,191,000	0.47%	1.58%
GA	Harllee Branch	CS001 (1, 2)		27,430		26,616		-2.97%	
GA	Harllee Branch	1	Substitution		13,369,418		14,360,313		7.41%
GA	Harllee Branch	2	Substitution		16,458,597		14,456,249		-12.17%
GA	Harllee Branch	CS002 (3, 4)		54,029		39,409		-27.06%	
GA	Harllee Branch	3	Substitution		29,080,722		19,090,017		-34.36%
GA	Harllee Branch	4	Substitution		31,152,770		25,267,007		-18.89%
GA	Jack Mcdonough	CS001 (MB1, MB2)		19,586		18,544		-5.32%	
GA	Jack Mcdonough	MB1	Table 1		13,691,408		14,011,717		2.34%
GA	Jack Mcdonough	MB2	Table 1		16,567,755		13,696,390		-17.33%
GA	Kraft	CS001 (1, 2, 3)		3,944		4,658		18.10%	
GA	Kraft	1	Substitution		1,073,163		1,626,008		51.52%
GA	Kraft	2	Substitution		974,178		1,220,370		25.27%
GA	Kraft	3	Substitution		1,981,050		2,376,381		19.96%
GA	Mcintosh	1	Substitution	6,611	6,058,266	5,713	6,698,411	-13.58%	10.57%
GA	Mitchell	3	Substitution	3,570	3,821,605	4,129	3,956,533	15.66%	3.53%
GA	Wansley	1	Table 1	26,797	39,368,026	33,612	40,844,610	25.43%	3.75%
GA	Wansley	2	Table 1	27,004	40,298,273	37,059	44,775,798	37.24%	11.11%
GA	Yates	Y1BR	Table 1	118	3,253,721	103	2,858,072	-12.71%	-12.16%
GA	Yates	CS001 (Y2BR, Y3BR)		4,054		4,869		20.10%	
GA	Yates	Y2BR	Table 1		2,701,265		3,418,865		26.57%
GA	Yates	Y3BR	Table 1		2,129,655		3,189,297		49.76%
GA	Yates	CS002 (Y4BR, Y5BR)		3,879		5,211		34.34%	
GA	Yates	Y4BR	Table 1		2,143,461		3,775,583		76.14%
GA	Yates	Y5BR	Table 1		2,640,857		3,086,657		16.88%
GA	Yates	Y6BR	Table 1	6,535	9,589,905	7,139	11,140,080	9.24%	16.16%
GA	Yates	Y7BR	Table 1	5,683	8,868,859	6,786	10,667,714	19.41%	20.28%
IA	Burlington	1	Table 1	9,020	8,818,996	6,309	9,611,935	-30.06%	8.99%
IA	Des Moines	11	Table 1	0	0	0	0	0.00%	0.00%
IA	George Neal North	1	Table 1	3,812	9,246,893	3,782	9,453,477	-0.79%	2.23%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
IA	Milton L Kapp	2	Table 1	7,450	11,498,280	5,989	11,236,532	-19.61%	-2.28%
IA	Prairie Creek	4	Table 1	5,279	8,771,126	2,744	8,290,105	-48.02%	-5.48%
IA	Riverside	9	Table 1	1,828	4,381,656	2,285	5,487,073	25.00%	25.23%
IL	Baldwin	1	Table 1	75,044	28,381,136	92,492	35,993,704	23.25%	26.82%
IL	Baldwin	2	Table 1	104,172	39,231,680	75,793	29,324,128	-27.24%	-25.25%
IL	Baldwin	3	Table 1	86,789	32,553,530	105,553	40,432,952	21.62%	24.20%
IL	Coffeen	CS0001 (1, 2)		31,228		43,755		40.11%	
IL	Coffeen	1	Table 1		9,910,849		16,654,324		68.04%
IL	Coffeen	2	Table 1		28,368,686		31,814,222		12.15%
IL	Collins	CS1230 (1, 2, 3)		375		1,237		229.87%	
IL	Collins	1	Substitution		12,406,868		6,755,310		-45.55%
IL	Collins	2	Substitution		9,562,665		6,510,067		-31.92%
IL	Collins	3	Substitution		8,382,516		9,007,079		7.45%
IL	Collins	CS0405 (4, 5)		2,708		1,704		-37.08%	
IL	Collins	4	Substitution		4,067,958		6,090,653		49.72%
IL	Collins	5	Substitution		3,308,955		3,233,683		-2.27%
IL	Grand Tower	7	Substitution	1,043	445,074	3,271	1,402,802	213.61%	215.18%
IL	Grand Tower	8	Substitution	1,017	447,459	2,686	1,190,947	164.11%	166.16%
IL	Grand Tower	9	Table 1	6,950	3,000,220	13,596	5,945,488	95.63%	98.17%
IL	Havana	1	Substitution	0	0	0	0	0.00%	0.00%
IL	Havana	2	Substitution	0	0	0	0	0.00%	0.00%
IL	Havana	3	Substitution	0	0	0	0	0.00%	0.00%
IL	Havana	4	Substitution	0	0	0	0	0.00%	0.00%
IL	Havana	5	Substitution	0	0	0	0	0.00%	0.00%
IL	Havana	6	Substitution	0	0	0	0	0.00%	0.00%
IL	Havana	7	Substitution	0	0	0	0	0.00%	0.00%
IL	Havana	8	Substitution	0	0	0	0	0.00%	0.00%
IL	Hennepin	1	Substitution	9,215	4,115,547	7,794	3,514,131	-15.42%	-14.61%
IL	Hennepin	2	Table 1	27,560	11,110,630	39,842	15,675,990	44.56%	41.09%
IL	Hutsonville	5	Substitution	4,455	2,158,806	10,772	4,959,359	141.80%	129.73%
IL	Hutsonville	6	Substitution	3,355	1,609,690	8,529	3,814,018	154.22%	136.94%
IL	Joliet 9	5	Substitution	3,274	13,664,473	1,967	7,665,686	-39.92%	-43.90%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
IL	Joppa Steam	CS1 (1, 2)		8,090		8,572		5.96%	
IL	Joppa Steam	1	Table 1		14,837,967		14,960,182		0.82%
IL	Joppa Steam	2	Table 1		15,478,622		15,969,238		3.17%
IL	Joppa Steam	CS2 (3, 4)		7,692		8,071		4.93%	
IL	Joppa Steam	3	Table 1		14,490,731		15,215,573		5.00%
IL	Joppa Steam	4	Table 1		14,707,065		13,102,754		-10.91%
IL	Joppa Steam	CS3 (5, 6)		12,166		8,644		-28.95%	
IL	Joppa Steam	5	Table 1		13,848,945		15,574,434		12.46%
IL	Joppa Steam	6	Table 1		16,605,286		14,937,071		-10.05%
IL	Kincaid	CS0102 (1, 2)		11,170		20,051		79.51%	
IL	Kincaid	1	Table 1		10,956,972		20,133,483		83.75%
IL	Kincaid	2	Table 1		17,559,881		21,671,782		23.42%
IL	Meredosia	CS0001 (1, 2, 3, 4)		4,022		6,672		65.89%	
IL	Meredosia	1	Substitution		474,083		1,044,625		120.35%
IL	Meredosia	2	Substitution		457,564		708,893		54.93%
IL	Meredosia	3	Substitution		425,038		664,115		56.25%
IL	Meredosia	4	Substitution		511,152		903,356		76.73%
IL	Meredosia	5	Table 1	19,610	10,666,246	15,943	11,667,552	-18.70%	9.39%
IL	Meredosia	6	Substitution	63	219,206	112	373,709	77.78%	70.48%
IL	Newton	1	Substitution	11,221	36,812,602	11,148	27,174,200	-0.65%	-26.18%
IL	Newton	2	Substitution	12,258	27,313,916	15,404	32,173,480	25.66%	17.79%
IL	Vermilion	CS3 (1, 2)		2,623		579		-77.93%	
IL	Vermilion	1	Substitution		977,411		358,330		-63.34%
IL	Vermilion	2	Table 1		1,817,754		743,988		-59.07%
IL	Wood River	1	Substitution	0	0	0	0	0.00%	0.00%
IN	Bailly	XS12 (7, 8)		6,246		3,835		-38.60%	
IN	Bailly	7	Table 1		12,771,576		12,840,429		0.54%
IN	Bailly	8	Table 1		21,796,237		18,413,238		-15.52%
IN	Breed	1	Table 1	0	0	0	0	0.00%	0.00%
IN	Cayuga	1	Table 1	44,666	30,209,082	38,676	31,117,238	-13.41%	3.01%
IN	Cayuga	2	Table 1	46,504	33,199,670	32,134	24,405,552	-30.90%	-26.49%
IN	Clifty Creek	CS001 (1, 2, 3)		47,634		50,661		6.35%	
IN	Clifty Creek	1	Table 1		16,650,268		16,465,964		-1.11%
IN	Clifty Creek	2	Table 1		16,005,819		15,821,604		-1.15%
IN	Clifty Creek	3	Table 1		15,832,010		16,401,939		3.60%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
IN	Clifty Creek	CS002 (4, 5, 6)		43,870		53,668		22.33%	
IN	Clifty Creek	4	Table 1		15,290,483		16,332,747		6.82%
IN	Clifty Creek	5	Table 1		16,748,991		18,078,609		7.94%
IN	Clifty Creek	6	Table 1		15,945,886		16,547,688		3.77%
IN	Elmer W Stout	50	Table 1	5,282	4,089,451	6,045	5,588,803	14.45%	36.66%
IN	Elmer W Stout	60	Table 1	6,151	4,830,084	5,466	4,806,792	-11.14%	-0.48%
IN	Elmer W Stout	70	Table 1	27,424	21,935,232	26,764	24,589,328	-2.41%	12.10%
IN	F B Culley	XS23 (2, 3)		2,549		4,800		88.31%	
IN	F B Culley	2	Table 1		5,447,464		5,328,808		-2.18%
IN	F B Culley	3	Table 1		19,155,053		20,119,291		5.03%
IN	Frank E Ratts	1SG1	Table 1	10,038	8,434,296	5,284	4,590,729	-47.36%	-45.57%
IN	Frank E Ratts	2SG1	Table 1	10,604	9,072,148	8,066	7,114,275	-23.93%	-21.58%
IN	Gibson	CS0003 (1, 2)		99,980		91,546		-8.44%	
IN	Gibson	1	Table 1		45,987,068		37,712,577		-17.99%
IN	Gibson	2	Table 1		42,943,632		41,393,737		-3.61%
IN	Gibson	3	Table 1	60,912	44,354,520	35,273	30,798,399	-42.09%	-30.56%
IN	Gibson	4	Table 1	3,783	35,663,082	8,993	37,063,085	137.72%	3.93%
IN	H T Pritchard	CS596 (5, 6)		5,932		7,068		19.15%	
IN	H T Pritchard	5	Substitution		1,310,910		1,463,618		11.65%
IN	H T Pritchard	6	Table 1		4,434,954		5,275,111		18.94%
IN	Michigan City	12	Table 1	12,261	28,031,314	14,841	30,794,272	21.04%	9.86%
IN	Petersburg	1	Table 1	21,305	13,400,952	10,473	17,644,936	-50.84%	31.67%
IN	Petersburg	2	Table 1	41,356	27,389,587	16,002	32,737,948	-61.31%	19.53%
IN	R Gallagher	CS0001 (1, 2)		25,393		21,609		-14.90%	
IN	R Gallagher	1	Table 1		8,580,819		6,645,958		-22.55%
IN	R Gallagher	2	Table 1		8,017,569		8,185,232		2.09%
IN	R Gallagher	CS0002 (3, 4)		26,237		28,826		9.87%	
IN	R Gallagher	3	Table 1		8,244,314		11,064,458		34.21%
IN	R Gallagher	4	Table 1		10,139,139		9,937,363		-1.99%
IN	Tanners Creek	U4	Table 1	29,318	22,957,388	59,876	30,441,214	104.23%	32.60%
IN	Wabash River	1	Table 1	197	900,120	4,197	5,111,474	2030.46%	467.87%
IN	Wabash River	CS0005 (2, 3, 5, 6)		28,211		38,986		38.19%	
IN	Wabash River	2	Table 1		2,791,626		4,532,020		62.34%
IN	Wabash River	3	Table 1		3,065,847		4,199,125		36.96%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
IN	Wabash River	5	Table 1		2,545,794		3,972,597		56.05%
IN	Wabash River	6	Table 1		13,535,943		17,273,741		27.61%
IN	Warrick	XS123 (1, 2, 3)		0		37,290		NA	
IN	Warrick	3	Opt-In		0		6,377,241		0.00%
IN	Warrick	1	Opt-In		0		6,195,697		0.00%
IN	Warrick	2	Opt-In		0		4,496,464		0.00%
IN	Warrick	4	Table 1	37,682	25,255,490	55,629	26,106,280	47.63%	3.37%
KS	La Cygne	1	Substitution	3,872	26,648,414	6,372	44,868,034	64.57%	68.37%
KS	Quindaro	2	Table 1	2,893	5,381,937	1,715	1,535,354	-40.72%	-71.47%
KY	Coleman	C1	Table 1	15,759	9,614,411	17,749	10,119,011	12.63%	5.25%
KY	Coleman	C2	Table 1	18,500	11,221,953	19,919	11,620,382	7.67%	3.55%
KY	Coleman	C3	Table 1	18,013	11,051,816	19,488	11,302,035	8.19%	2.26%
KY	Cooper	CS1 (1, 2)		18,389		16,652		-9.45%	
KY	Cooper	1	Table 1		5,608,823		6,203,553		10.60%
KY	Cooper	2	Table 1		12,063,229		11,866,456		-1.63%
KY	E W Brown	1	Table 1	4,259	4,080,757	5,500	5,585,611	29.14%	36.88%
KY	E W Brown	CS003 (2, 3)		23,446		33,012		40.80%	
KY	E W Brown	2	Table 1		8,859,559		9,847,964		11.16%
KY	E W Brown	3	Table 1		15,233,699		25,069,168		64.56%
KY	East Bend	2	Substitution	11,378	46,794,633	11,023	43,733,535	-3.12%	-6.54%
KY	Elmer Smith	XS12 (1, 2)		7,855		6,280		-20.05%	
KY	Elmer Smith	1	Table 1		11,396,536		8,264,788		-27.48%
KY	Elmer Smith	2	Table 1		16,833,098		19,624,228		16.58%
KY	Ghent	1	Table 1	8,311	37,305,085	7,484	38,126,562	-9.95%	2.20%
KY	Green River	5	Table 1	10,448	4,948,596	10,192	4,951,922	-2.45%	0.07%
KY	H L Spurlock	1	Table 1	15,297	22,412,764	13,334	19,356,664	-12.83%	-13.64%
KY	Hmp&L Station 2	H1	Table 1	10,616	11,541,841	2,315	12,528,434	-78.19%	8.55%
KY	Hmp&L Station 2	H2	Table 1	10,616	9,513,945	3,578	13,374,978	-66.30%	40.58%
KY	Paradise	3	Table 1	155,612	63,202,168	146,291	60,987,316	-5.99%	-3.50%
KY	R D Green	G1	Substitution	1,580	19,523,824	1,085	18,663,054	-31.33%	-4.41%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
KY	R D Green	G2	Substitution	1,689	14,243,216	2,314	16,982,755	37.00%	19.23%
KY	Shawnee	10	Table 1	2,953	10,752,771	2,399	9,307,313	-18.76%	-13.44%
MA	Brayton Point	1	Compensating	11,739	17,047,825	9,045	17,380,816	-22.95%	1.95%
MA	Mount Tom	1	Substitution	8,223	9,923,946	7,314	9,908,995	-11.05%	-0.15%
MD	C P Crane	1	Table 1	6,138	10,403,533	15,581	12,760,058	153.84%	22.65%
MD	C P Crane	2	Table 1	6,024	9,920,042	13,163	10,904,815	118.51%	9.93%
MD	Chalk Point	CSE12 (1, 2)		41,087		37,211		-9.43%	
MD	Chalk Point	1	Table 1		17,440,446		19,675,719		12.82%
MD	Chalk Point	2	Table 1		20,961,601		16,341,786		-22.04%
MD	Chalk Point	3	Substitution	3,010	6,119,037	2,678	4,153,249	-11.03%	-32.13%
MD	Chalk Point	4	Substitution	1,354	10,668,616	1,354	6,556,094	0.00%	-38.55%
MD	Morgantown	1	Table 1	28,040	27,858,112	37,236	37,010,782	32.80%	32.85%
MD	Morgantown	2	Table 1	38,515	37,190,575	35,542	35,650,179	-7.72%	-4.14%
MD	R P Smith	9	Substitution	118	170,583	78	107,596	-33.90%	-36.92%
MD	R P Smith	11	Substitution	1,536	2,125,734	2,069	2,833,072	34.70%	33.28%
MI	Dan E Karn	1	Substitution	7,272	12,444,982	9,765	16,478,448	34.28%	32.41%
MI	Dan E Karn	2	Substitution	11,137	18,168,756	9,506	15,850,441	-14.64%	-12.76%
MI	J C Weadock	CS0009 (7, 8)		11,789		10,792		-8.46%	
MI	J C Weadock	7	Substitution		10,947,084		8,551,701		-21.88%
MI	J C Weadock	8	Substitution		9,862,172		9,538,250		-3.28%
MI	J H Campbell	CS0009 (1, 2)		13,171		22,771		72.89%	
MI	J H Campbell	1	Table 1		16,333,282		15,942,587		-2.39%
MI	J H Campbell	2	Table 1		4,809,230		20,946,592		335.55%
MI	J H Campbell	3	Substitution	27,198	52,821,444	22,141	47,025,128	-18.59%	-10.97%
MI	J R Whiting	1	Substitution	4,244	6,684,072	3,538	5,488,183	-16.64%	-17.89%
MI	J R Whiting	3	Substitution	4,807	7,936,734	4,236	6,515,893	-11.88%	-17.90%
MN	High Bridge	CS0001 (3, 4, 5, 6)		3,040		3,768		23.95%	
MN	High Bridge	3	Substitution		1,203,949		1,397,090		16.04%
MN	High Bridge	4	Substitution		2,203,745		1,915,234		-13.09%
MN	High Bridge	5	Substitution		4,590,541		5,087,413		10.82%
MN	High Bridge	6	Table 1		7,723,726		9,292,112		20.31%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
MN	Sherburne County	CS1 (1, 2)		9,463		10,156		7.32%	
MN	Sherburne County	1	Substitution		46,196,144		51,389,952		11.24%
MN	Sherburne County	2	Substitution		47,197,300		51,477,248		9.07%
MO	Asbury	1	Table 1	8,112	13,925,197	6,339	11,502,268	-21.86%	-17.40%
MO	Hawthorn	5	Substitution	5,634	22,867,020	8,352	26,458,409	48.24%	15.71%
MO	James River	3	Substitution	744	2,314,728	2,358	2,206,094	216.94%	-4.69%
MO	James River	4	Substitution	966	3,675,945	4,874	3,885,157	404.55%	5.69%
MO	James River	5	Table 1	2,054	6,161,194	8,513	7,562,737	314.46%	22.75%
MO	Labadie	1	Table 1	23,321	32,420,157	11,681	37,988,343	-49.91%	17.18%
MO	Labadie	2	Table 1	23,236	36,144,760	6,899	20,875,392	-70.31%	-42.25%
MO	Labadie	3	Table 1	38,025	35,134,368	51,536	42,373,060	35.53%	20.60%
MO	Labadie	4	Table 1	44,223	40,613,571	36,790	31,934,417	-16.81%	-21.37%
MO	Meramec	1	Substitution	1,852	2,966,463	3,344	3,684,584	80.56%	24.21%
MO	Meramec	2	Substitution	1,209	1,938,813	3,522	4,040,199	191.32%	108.39%
MO	Meramec	3	Substitution	4,702	6,008,665	5,682	6,226,032	20.84%	3.62%
MO	Meramec	4	Substitution	5,161	5,918,092	4,678	5,282,678	-9.36%	-10.74%
MO	Montrose	1	Table 1	2,317	8,891,517	2,877	11,154,264	24.17%	25.45%
MO	Montrose	CS023 (2, 3)		5,644		5,431		-3.77%	
MO	Montrose	2	Table 1		10,710,072		10,700,341		-0.09%
MO	Montrose	3	Table 1		11,390,992		9,451,260		-17.03%
MO	New Madrid	1	Table 1	8,827	37,073,840	8,855	37,130,588	0.32%	0.15%
MO	New Madrid	2	Table 1	7,926	39,093,068	8,007	38,456,072	1.02%	-1.63%
MO	Rush Island	1	Substitution	21,412	39,390,852	13,225	37,060,698	-38.24%	-5.92%
MO	Rush Island	2	Substitution	22,209	32,955,086	14,044	39,943,130	-36.76%	21.20%
MO	Sibley	CS0001 (1, 2, 3)		12,214		17,893		46.50%	
MO	Sibley	1	Substitution		3,275,126		3,323,704		1.48%
MO	Sibley	2	Substitution		3,201,052		3,278,399		2.42%
MO	Sibley	3	Table 1		21,806,789		25,052,823		14.89%
MO	Sioux	1	Table 1	27,477	20,429,379	22,358	16,705,724	-18.63%	-18.23%
MO	Sioux	2	Table 1	20,379	16,935,316	34,038	26,575,398	67.02%	56.92%
MO	Southwest	1	Substitution	2,144	9,023,810	3,066	11,742,780	43.00%	30.13%
MO	Thomas Hill	MB1	Table 1	2,817	13,435,098	2,934	13,624,236	4.15%	1.41%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
MO	Thomas Hill	MB2	Table 1	3,749	17,244,380	4,685	22,154,212	24.97%	28.47%
MO	Thomas Hill	MB3	Substitution	10,404	49,236,656	9,798	45,296,444	-5.82%	-8.00%
MS	Jack Watson	4	Table 1	18,577	11,344,947	19,627	14,560,545	5.65%	28.34%
MS	Jack Watson	5	Table 1	38,044	23,456,288	43,588	32,937,887	14.57%	40.42%
MS	R D Morrow	1	Substitution	2,914	9,255,066	4,847	15,620,857	66.33%	68.78%
MS	R D Morrow	2	Substitution	3,618	10,149,701	3,749	12,152,295	3.62%	19.73%
MS	Victor J Daniel Jr	2	Substitution	10,168	28,195,408	9,476	26,055,044	-6.81%	-7.59%
NH	Merrimack	1	Table 1	10,450	8,230,447	10,606	7,621,232	1.49%	-7.40%
NH	Merrimack	2	Table 1	25,678	22,133,654	24,037	19,712,188	-6.39%	-10.94%
NH	Newington	1	Substitution	11,155	16,127,739	9,291	11,114,684	-16.71%	-31.08%
NJ	B L England	1	Table 1	18,101	8,141,332	18,568	9,042,302	2.58%	11.07%
NJ	B L England	2	Table 1	3,619	10,819,425	1,752	11,703,690	-51.59%	8.17%
NY	Dunkirk	CS0003 (3, 4)		34,621		31,867		-7.95%	
NY	Dunkirk	3	Table 1		10,143,622		10,792,925		6.40%
NY	Dunkirk	4	Table 1		12,425,425		10,116,478		-18.58%
NY	Greenidge	6	Table 1	9,824	7,184,237	7,144	5,512,986	-27.28%	-23.26%
NY	Milliken	XS12 (1, 2)		9,376		4,471		-52.31%	
NY	Milliken	1	Table 1		12,731,349		10,957,583		-13.93%
NY	Milliken	2	Table 1		10,409,978		11,668,817		12.09%
NY	Northport	1	Table 1	4,114	7,303,890	6,060	11,054,751	47.30%	51.35%
NY	Northport	2	Table 1	2,228	17,624,404	3,484	17,346,236	56.37%	-1.58%
NY	Northport	3	Table 1	4,047	7,703,107	4,649	8,524,632	14.88%	10.66%
NY	Northport	4	Substitution	538	23,759,787	1,384	16,800,166	157.25%	-29.29%
NY	Oswego	4	Substitution	0	0	0	0	0.00%	0.00%
NY	Oswego	5	Substitution	0	0	0	0	0.00%	0.00%
NY	Oswego	6	Substitution	837	4,261,424	772	3,242,998	-7.77%	-23.90%
NY	Port Jefferson	3	Table 1	3,640	6,598,425	2,835	5,475,689	-22.12%	-17.02%
NY	Port Jefferson	4	Table 1	2,636	4,722,844	4,499	8,003,758	70.68%	69.47%
NY	Roseton	1	Substitution	1,607	7,175,269	2,903	6,148,402	80.65%	-14.31%
NY	Roseton	2	Substitution	2,381	10,692,101	4,021	7,670,038	68.88%	-28.26%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
OH	Acme	13	Substitution	0	0	0	0	0.00%	0.00%
OH	Acme	14	Substitution	0	0	0	0	0.00%	0.00%
OH	Acme	15	Substitution	0	0	0	0	0.00%	0.00%
OH	Acme	16	Substitution	0	0	0	0	0.00%	0.00%
OH	Acme	91	Substitution	0	0	0	0	0.00%	0.00%
OH	Acme	92	Substitution	0	0	0	0	0.00%	0.00%
OH	Ashtabula	7	Table 1	18,183	5,511,963	41,910	12,131,030	130.49%	120.09%
OH	Avon Lake	9	Substitution	2,594	2,236,810	1,231	1,685,434	-52.54%	-24.65%
OH	Avon Lake	10	Substitution	3,309	4,989,579	3,668	5,121,816	10.85%	2.65%
OH	Avon Lake	11	Table 1	0	0	0	0	0.00%	0.00%
OH	Avon Lake	12	Table 1	21,921	32,497,742	27,863	34,561,596	27.11%	6.35%
OH	Bay Shore	CS5 (1, 2, 3, 4)		25,051		25,025		-0.10%	
OH	Bay Shore	1	Substitution		7,651,417		7,693,884		0.56%
OH	Bay Shore	2	Substitution		7,419,431		6,622,437		-10.74%
OH	Bay Shore	3	Substitution		7,676,340		7,582,696		-1.22%
OH	Bay Shore	4	Substitution		9,735,000		10,498,676		7.84%
OH	Cardinal	1	Table 1	83,160	33,575,480	76,138	29,017,768	-8.44%	-13.57%
OH	Cardinal	2	Table 1	22,146	39,902,156	28,212	26,408,584	27.39%	-33.82%
OH	Conesville	CS012 (1, 2)		19,753		25,264		27.90%	
OH	Conesville	1	Table 1		3,180,516		5,267,264		65.61%
OH	Conesville	2	Table 1		6,148,562		5,867,919		-4.56%
OH	Conesville	3	Table 1	8,125	4,371,286	12,794	5,872,821	57.46%	34.35%
OH	Conesville	4	Table 1	62,940	29,868,708	58,778	27,390,004	-6.61%	-8.30%
OH	Eastlake	1	Table 1	8,635	4,959,011	13,095	6,729,324	51.65%	35.70%
OH	Eastlake	2	Table 1	13,025	7,087,542	13,779	7,530,250	5.79%	6.25%
OH	Eastlake	3	Table 1	14,451	8,096,208	10,599	5,833,256	-26.66%	-27.95%
OH	Eastlake	4	Table 1	23,405	12,634,666	22,538	11,184,656	-3.70%	-11.48%
OH	Eastlake	5	Table 1	57,855	26,915,088	60,719	31,917,980	4.95%	18.59%
OH	Edgewater	11	Substitution	0	0	0	0	0.00%	0.00%
OH	Edgewater	12	Substitution	0	0	0	0	0.00%	0.00%
OH	Edgewater	13	Table 1	10	1,649,050	4	169,446	-60.00%	-89.72%
OH	Gen J M Gavin	1	Table 1	11,945	86,515,632	28,370	85,368,952	137.51%	-1.33%
OH	Gen J M Gavin	2	Table 1	11,533	68,002,336	40,672	100,099,832	252.66%	47.20%
OH	Gorge	25	Substitution	0	0	0	0	0.00%	0.00%
OH	Gorge	26	Substitution	0	0	0	0	0.00%	0.00%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
OH	J M Stuart	1	Substitution	22,861	32,762,470	22,910	32,856,554	0.21%	0.29%
OH	J M Stuart	2	Substitution	31,903	44,629,995	28,054	39,776,416	-12.06%	-10.88%
OH	J M Stuart	3	Substitution	25,034	34,990,744	25,957	36,913,980	3.69%	5.50%
OH	J M Stuart	4	Substitution	27,841	38,786,248	22,226	31,602,492	-20.17%	-18.52%
OH	Kyger Creek	CS001 (1, 2, 3, 4, 5)		92,806		123,599		33.18%	
OH	Kyger Creek	1	Table 1		15,812,450		15,541,682		-1.71%
OH	Kyger Creek	2	Table 1		15,962,478		15,701,555		-1.63%
OH	Kyger Creek	3	Table 1		16,634,018		15,148,702		-8.93%
OH	Kyger Creek	4	Table 1		15,557,962		14,375,389		-7.60%
OH	Kyger Creek	5	Table 1		16,166,596		16,381,780		1.33%
OH	Lake Shore	18	Substitution	0	0	1,433	2,396,829	NA	0.00%
OH	Lake Shore	91	Substitution	0	0	0	0	0.00%	0.00%
OH	Lake Shore	92	Substitution	0	0	0	0	0.00%	0.00%
OH	Lake Shore	93	Substitution	0	0	0	0	0.00%	0.00%
OH	Lake Shore	94	Substitution	0	0	0	0	0.00%	0.00%
OH	Miami Fort	CS056 (5-1, 5-2, 6)		4,193		14,421		243.93%	
OH	Miami Fort	5-1	Table 1		196,579		516,801		162.90%
OH	Miami Fort	5-2	Table 1		196,579		516,801		162.90%
OH	Miami Fort	6	Table 1		4,580,562		12,392,706		170.55%
OH	Miami Fort	7	Table 1	21,301	28,213,054	38,985	38,049,581	83.02%	34.87%
OH	Muskingum River	CS014 (1, 2, 3, 4)		102,908		160,368		55.84%	
OH	Muskingum River	1	Table 1		5,416,381		9,743,860		79.90%
OH	Muskingum River	2	Table 1		7,060,761		10,890,512		54.24%
OH	Muskingum River	3	Table 1		7,503,635		11,872,478		58.22%
OH	Muskingum River	4	Table 1		8,997,649		11,380,074		26.48%
OH	Muskingum River	5	Table 1	14,648	27,541,864	20,223	36,993,688	38.06%	34.32%
OH	Niles	1	Table 1	13,080	6,798,223	7,110	7,986,488	-45.64%	17.48%
OH	Niles	2	Table 1	12,340	5,531,406	15,375	5,619,661	24.59%	1.60%
OH	Picway	9	Table 1	4,722	1,792,457	15,071	5,014,683	219.17%	179.77%
OH	Poston	1	Substitution	0	0	0	0	0.00%	0.00%
OH	Poston	2	Substitution	0	0	0	0	0.00%	0.00%
OH	Poston	3	Substitution	0	0	0	0	0.00%	0.00%
OH	R E Burger	CS0001 (1, 2, 3, 4, 5, 6, 7, 8)		41,658		62,557		50.17%	
OH	R E Burger	1	Substitution		308,726		0		-100.00%
OH	R E Burger	2	Substitution		263,393		0		-100.00%
OH	R E Burger	3	Substitution		226,002		0		-100.00%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
OH	R E Burger	4	Substitution		92,323		0		-100.00%
OH	R E Burger	5	Table 1		491,027		342,333		-30.28%
OH	R E Burger	6	Table 1		491,368		345,590		-29.67%
OH	R E Burger	7	Table 1		6,031,625		12,358,365		104.89%
OH	R E Burger	8	Table 1		10,268,509		10,058,514		-2.05%
OH	Toronto	9	Substitution	0	0	0	0	0.00%	0.00%
OH	Toronto	10	Substitution	0	0	0	0	0.00%	0.00%
OH	Toronto	11	Substitution	0	0	0	0	0.00%	0.00%
OH	W H Sammis	5	Table 1	12,627	20,924,484	12,247	17,229,437	-3.01%	-17.66%
OH	W H Sammis	6	Table 1	27,041	44,119,407	30,444	40,507,621	12.58%	-8.19%
OH	W H Sammis	7	Table 1	22,162	33,827,070	27,966	39,173,092	26.19%	15.80%
OH	Walter C Beckjord	5	Table 1	8,347	9,616,651	22,761	15,965,398	172.68%	66.02%
OH	Walter C Beckjord	6	Table 1	17,479	21,792,036	40,041	27,366,092	129.08%	25.58%
PA	Armstrong	1	Table 1	4,711	3,503,406	16,496	11,760,419	250.16%	235.69%
PA	Armstrong	2	Table 1	17,196	13,270,697	15,654	10,843,803	-8.97%	-18.29%
PA	Bruce Mansfield	1	Substitution	7,388	47,151,736	5,831	39,049,744	-21.07%	-17.18%
PA	Bruce Mansfield	2	Substitution	5,532	34,343,992	8,159	51,758,064	47.49%	50.70%
PA	Brunner Island	CS102 (1, 2)		41,061		47,771		16.34%	
PA	Brunner Island	1	Table 1		18,577,384		19,038,246		2.48%
PA	Brunner Island	2	Table 1		17,525,951		21,075,806		20.25%
PA	Brunner Island	3	Table 1	56,335	49,753,884	44,832	39,299,942	-20.42%	-21.01%
PA	Cheswick	1	Table 1	42,900	35,130,348	39,980	32,374,384	-6.81%	-7.84%
PA	Conemaugh	1	Table 1	4,729	72,404,491	3,376	56,341,839	-28.61%	-22.18%
PA	Conemaugh	2	Table 1	73,364	52,129,065	3,732	60,156,610	-94.91%	15.40%
PA	Hatfield's Ferry	XS123 (1, 2, 3)		164,841		153,413		-6.93%	
PA	Hatfield's Ferry	1	Table 1		39,196,629		32,091,132		-18.13%
PA	Hatfield's Ferry	2	Table 1		28,031,200		33,885,414		20.88%
PA	Hatfield's Ferry	3	Table 1		29,440,740		27,107,067		-7.93%
PA	Martins Creek	CS102 (1, 2)		10,762		24,601		128.59%	
PA	Martins Creek	1	Table 1		5,495,084		10,422,634		89.67%
PA	Martins Creek	2	Table 1		4,380,845		7,831,516		78.77%
PA	Martins Creek	3	Substitution	3,045	6,673,213	2,442	5,348,032	-19.80%	-19.86%
PA	Martins Creek	4	Substitution	3,455	7,686,067	3,016	8,813,199	-12.71%	14.66%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
PA	Mitchell	33	Substitution	835	13,990,360	728	9,346,753	-12.81%	-33.19%
PA	New Castle	1	Substitution	0	0	0	0	0.00%	0.00%
PA	New Castle	2	Substitution	0	0	0	0	0.00%	0.00%
PA	Portland	1	Table 1	11,088	7,308,370	11,963	8,004,960	7.89%	9.53%
PA	Portland	2	Table 1	11,055	7,470,403	13,820	9,654,232	25.01%	29.23%
PA	Shawville	1	Table 1	14,265	9,567,429	10,587	7,071,835	-25.78%	-26.08%
PA	Shawville	2	Table 1	10,837	6,931,655	13,474	8,841,290	24.33%	27.55%
PA	Shawville	CS1 (3, 4)		33,302		29,884		-10.26%	
PA	Shawville	3	Table 1		12,104,776		12,231,908		1.05%
PA	Shawville	4	Table 1		11,393,059		9,337,793		-18.04%
PA	Sunbury	3	Table 1	9,847	8,181,105	9,511	7,316,803	-3.41%	-10.56%
PA	Sunbury	4	Table 1	9,511	8,087,213	10,939	8,495,968	15.01%	5.05%
TN	Allen	1	Table 1	13,144	14,735,570	5,434	13,232,597	-58.66%	-10.20%
TN	Allen	2	Table 1	16,512	15,702,330	6,503	15,751,898	-60.62%	0.32%
TN	Allen	3	Table 1	18,618	15,721,586	8,395	13,330,030	-54.91%	-15.21%
TN	Cumberland	1	Table 1	12,445	125,433,200	9,524	88,223,696	-23.47%	-29.66%
TN	Cumberland	2	Table 1	13,685	120,376,016	13,252	121,294,176	-3.16%	0.76%
TN	DuPont Johnsonville	JVD1	Opt-In	0		0	0	0.00%	NA
TN	DuPont Johnsonville	JVD2	Opt-In	0		0	0	0.00%	NA
TN	DuPont Johnsonville	JVD3	Opt-In	0		0	0	0.00%	NA
TN	DuPont Johnsonville	JVD4	Opt-In	0		0	0	0.00%	NA
TN	Gallatin	CSGA12 (1, 2)		47,243		55,363		17.19%	
TN	Gallatin	1	Table 1		15,506,107		14,169,010		-8.62%
TN	Gallatin	2	Table 1		14,797,124		15,977,846		7.98%
TN	Gallatin	CSGA34 (3, 4)		51,122		61,303		19.92%	
TN	Gallatin	3	Table 1		16,469,892		15,888,894		-3.53%
TN	Gallatin	4	Table 1		14,950,402		18,810,130		25.82%
TN	Johnsonville	CSJO10 (1, 2, 3, 4, 5, 6, 7, 8, 9, 10)		114,677		126,367		10.19%	
TN	Johnsonville	1	Table 1		6,322,332		8,771,161		38.73%
TN	Johnsonville	2	Table 1		6,033,143		8,608,948		42.69%
TN	Johnsonville	3	Table 1		5,555,598		9,183,864		65.31%
TN	Johnsonville	4	Table 1		6,407,192		8,805,822		37.44%
TN	Johnsonville	5	Table 1		7,955,222		5,801,129		-27.08%
TN	Johnsonville	6	Table 1		6,882,233		8,424,067		22.40%
TN	Johnsonville	7	Table 1		10,264,280		10,200,693		-0.62%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
TN	Johnsonville	8	Table 1		8,061,575		10,405,425		29.07%
TN	Johnsonville	9	Table 1		8,643,472		7,736,863		-10.49%
TN	Johnsonville	10	Table 1		8,447,830		9,778,394		15.75%
WI	Alma	CS1 (B4, B5)		2,764		3,471		25.58%	
WI	Alma	B4	Substitution		748,608		1,924,740		157.11%
WI	Alma	B5	Substitution		2,871,171		2,887,317		0.56%
WI	Edgewater	3	Substitution	1,166	4,313,093	1,482	4,283,009	27.10%	-0.70%
WI	Edgewater	4	Table 1	6,482	20,198,330	7,378	21,529,980	13.82%	6.59%
WI	Genoa	1	Table 1	15,304	18,701,692	11,420	17,924,364	-25.38%	-4.16%
WI	J P Madgett	B1	Substitution	5,746	18,886,080	4,145	15,667,498	-27.86%	-17.04%
WI	Nelson Devey	CS1 (1, 2)		4,127		3,836		-7.05%	
WI	Nelson Dewey	1	Table 1		7,294,124		6,313,485		-13.44%
WI	Nelson Dewey	2	Table 1		7,415,426		6,231,595		-15.96%
WI	North Oak Creek	1	Table 1	0	0	0	0	0.00%	0.00%
WI	North Oak Creek	2	Table 1	0	0	0	0	0.00%	0.00%
WI	North Oak Creek	3	Table 1	0	0	0	0	0.00%	0.00%
WI	North Oak Creek	4	Table 1	0	0	0	0	0.00%	0.00%
WI	Port Washington	CS7 (1, 2, 3)		8,856		7,179		-18.94%	
WI	Port Washington	1	Substitution		1,404,855		2,135,778		52.03%
WI	Port Washington	2	Substitution		3,488,401		2,628,637		-24.65%
WI	Port Washington	3	Substitution		3,796,478		3,708,382		-2.32%
WI	Port Washington	4	Substitution	2,242	2,639,249	1,991	3,419,602	-11.20%	29.57%
WI	Port Washington	5	Substitution	0	0	0	0	0.00%	0.00%
WI	Pulliam	CS56 (5, 6)		1,152		1,518		31.77%	
WI	Pulliam	5	Substitution		1,980,594		2,476,389		25.03%
WI	Pulliam	6	Substitution		3,300,915		3,796,526		15.01%
WI	Pulliam	7	Substitution	1,466	6,450,858	1,574	6,789,476	7.37%	5.25%
WI	Pulliam	8	Table 1	2,087	9,292,156	2,445	10,388,203	17.15%	11.80%
WI	Rock River	1	Substitution	1,637	3,796,701	1,337	4,420,448	-18.33%	16.43%
WI	Rock River	2	Substitution	1,434	3,299,817	1,389	4,396,844	-3.14%	33.25%
WI	South Oak Creek	CS3 (5, 6)		11,006		13,543		23.05%	
WI	South Oak Creek	5	Table 1		12,605,832		14,710,533		16.70%
WI	South Oak Creek	6	Table 1		13,360,404		9,735,973		-27.13%

APPENDIX B-3: EMISSIONS AND UTILIZATION OF PHASE I UNITS, 1995 AND 1996

				1995		1996		Percent Change, 1995-1996	
State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)	SO2 Emissions	Utilization (mmBtu)
WI	South Oak Creek	CS4 (7, 8)		15,663		20,718		32.27%	
WI	South Oak Creek	7	Table 1		20,300,114		18,264,686		-10.03%
WI	South Oak Creek	8	Table 1		12,620,790		18,247,312		44.58%
WI	Weston	1	Substitution	969	3,302,695	1,106	3,536,812	14.14%	7.09%
WI	Weston	2	Substitution	1,936	6,891,829	2,021	6,567,751	4.39%	-4.70%
WV	Albright	1	Substitution	2,386	1,931,826	1,449	1,190,327	-39.27%	-38.38%
WV	Albright	2	Substitution	2,358	1,915,246	1,962	1,675,656	-16.79%	-12.51%
WV	Albright	3	Table 1	11,444	8,920,319	9,246	7,663,974	-19.21%	-14.08%
WV	Fort Martin	1	Table 1	26,803	21,629,768	33,684	26,435,504	25.67%	22.22%
WV	Fort Martin	2	Table 1	43,171	33,891,670	37,468	29,454,119	-13.21%	-13.09%
WV	Harrison	XS123 (1, 2, 3)		9,944		16,469		65.62%	
WV	Harrison	1	Table 1		46,581,148		50,422,229		8.25%
WV	Harrison	2	Table 1		47,280,205		49,485,012		4.66%
WV	Harrison	3	Table 1		45,540,215		46,729,368		2.61%
WV	Kammer	CS013 (1, 2, 3)		122,193		119,369		-2.31%	
WV	Kammer	1	Table 1		12,853,671		15,233,808		18.52%
WV	Kammer	2	Table 1		14,982,618		12,862,993		-14.15%
WV	Kammer	3	Table 1		15,522,353		14,005,666		-9.77%
WV	Mitchell	CS012 (1, 2)		61,623		53,152		-13.75%	
WV	Mitchell	1	Table 1		35,522,720		47,955,776		35.00%
WV	Mitchell	2	Table 1		47,106,040		34,334,844		-27.11%
WV	Mt Storm	CS0 (1, 2)		95,244		107,211		12.56%	
WV	Mt Storm	1	Table 1		36,081,280		40,588,560		12.49%
WV	Mt Storm	2	Table 1		39,353,660		43,397,872		10.28%
WV	Mt Storm	3	Table 1	2,549	38,955,084	5,096	28,675,658	99.92%	-26.39%
WV	Rivesville	7	Substitution	488	620,003	233	287,932	-52.25%	-53.56%
WV	Rivesville	8	Substitution	1,357	1,686,555	1,037	1,232,614	-23.58%	-26.92%
WV	Willow Island	2	Substitution	7,908	7,872,392	6,739	7,224,854	-14.78%	-8.23%
WY	Jim Bridger	BW71	Substitution	7,919	53,237,281	6,272	41,591,229	-20.80%	-21.88%
WY	Jim Bridger	BW72	Substitution	6,760	44,157,743	7,165	47,105,263	5.99%	6.67%
WY	Jim Bridger	BW73	Substitution	7,794	51,064,868	6,180	40,956,546	-20.71%	-19.80%
WY	Wyodak	BW91	Substitution	8,281	34,062,900	10,012	40,346,052	20.90%	18.45%

NOTES: (a) Identifies the affected unit as listed in Table 1, or as a substitution or compensating unit.

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions 1995 (b)	SO2 Emissions 1996 (b)	1996 Allowances Allocated (c)	Held in Unit Accounts as of 1/30/97	Allowances Deducted for Emissions (d)	Deducted Under Special Phase I Provisions (e)	Allowances Carried Over to 1997
AL	Colbert	CSCO14 (1, 2, 3, 4)		37,507	31,939					
AL	Colbert	1	Table 1			13,213	18,192	8,390	0	9,802
AL	Colbert	2	Table 1			14,907	18,968	8,221	0	10,747
AL	Colbert	3	Table 1			14,995	20,772	6,371	0	14,401
AL	Colbert	4	Table 1			15,005	20,801	8,957	0	11,844
AL	Colbert	5	Table 1	39,400	58,218	45,923	70,408	58,218	0	12,190
AL	E C Gaston	CS0CAN (1, 2)		15,532	22,028					
AL	E C Gaston	1	Table 1			17,624	13,231	10,578	0	2,653
AL	E C Gaston	2	Table 1			18,052	14,589	11,450	0	3,139
AL	E C Gaston	CS0CBN (3, 4)		17,036	19,812					
AL	E C Gaston	3	Table 1			17,828	11,871	9,850	0	2,021
AL	E C Gaston	4	Table 1			18,773	16,295	9,962	0	6,333
AL	E C Gaston	5	Table 1	23,170	33,819	58,265	39,761	33,819	0	5,942
AL	Gadsden	1	Substitution	4,278	4,893	5,158	6,038	4,893	0	1,145
AL	Gadsden	2	Substitution	4,043	5,168	5,374	6,705	5,168	0	1,537
FL	Big Bend	CS001 (BB01, BB02)		71,421	76,818					
FL	Big Bend	BB01	Table 1			27,662	41,114	38,409	0	2,705
FL	Big Bend	BB02	Table 1			26,387	41,063	38,409	0	2,654
FL	Big Bend	XS23 (BB03, BB04)		19,711	19,081					
FL	Big Bend	BB03	Table 1			26,036	14,986	14,311	0	675
FL	Big Bend	BB04	Substitution			6,400	8,858	4,770	0	4,088
FL	Crist	4	Substitution	3,849	2,513	9,953	16,057	2,513	0	13,544
FL	Crist	5	Substitution	3,071	2,566	9,374	15,677	2,566	0	13,111
FL	Crist	6	Table 1	9,678	13,304	18,695	27,712	13,304	0	14,408
FL	Crist	7	Table 1	18,352	14,853	50,703	51,395	14,853	0	36,542
FL	Scholz	1	Substitution	2,087	2,735	8,282	14,477	2,735	0	11,742
FL	Scholz	2	Substitution	2,561	3,186	8,572	14,583	3,186	0	11,397
GA	Arkwright	CS001 (1, 2, 3, 4)		3,134	4,386					
GA	Arkwright	1	Substitution			2,437	4,090	1,096	0	2,994
GA	Arkwright	2	Substitution			2,240	3,697	1,097	0	2,600
GA	Arkwright	3	Substitution			3,944	7,105	1,096	0	6,009
GA	Arkwright	4	Substitution			3,159	5,534	1,097	0	4,437
GA	Bowen	1BLR	Table 1	32,617	34,032	54,838	48,838	34,032	0	14,806
GA	Bowen	2BLR	Table 1	39,641	36,655	53,329	48,795	36,655	0	12,140
GA	Bowen	3BLR	Table 1	42,137	46,269	69,862	63,866	46,269	0	17,597
GA	Bowen	4BLR	Table 1	46,258	40,205	69,852	59,725	40,205	0	19,520
GA	Hammond	CS001 (1, 2, 3)		7,398	7,246					
GA	Hammond	1	Table 1			8,549	14,632	2,415	0	12,217
GA	Hammond	2	Table 1			8,977	15,488	2,415	0	13,073
GA	Hammond	3	Table 1			8,676	14,886	2,416	0	12,470
GA	Hammond	4	Table 1	14,297	14,364	36,650	51,003	14,364	0	36,639
GA	Harllee Branch	CS001 (1, 2)		27,430	26,616					
GA	Harllee Branch	1	Substitution			19,221	24,727	13,308	0	11,419
GA	Harllee Branch	2	Substitution			22,735	31,755	13,308	0	18,447

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions 1995 (b)	SO2 Emissions 1996 (b)	1996 Allowances Allocated (c)	Held in Unit Accounts as of 1/30/97	Allowances Deducted for Emissions (d)	Deducted Under Special Phase I Provisions (e)	Allowances Carried Over to 1997
GA	Harllee Branch	CS002 (3, 4)		54,029	39,409					
GA	Harllee Branch	3	Substitution			31,280	35,546	19,704	0	15,842
GA	Harllee Branch	4	Substitution			31,042	35,069	19,705	0	15,364
GA	Jack Mcdonough	CS001 (MB1, MB2)		19,586	18,544					
GA	Jack Mcdonough	MB1	Table 1			32,873	32,307	9,272	0	23,035
GA	Jack Mcdonough	MB2	Table 1			20,058	30,323	9,272	0	21,051
GA	Kraft	CS001 (1, 2, 3)		3,944	4,658					
GA	Kraft	1	Substitution			2,265	3,479	1,451	0	2,028
GA	Kraft	2	Substitution			2,137	3,320	1,088	0	2,232
GA	Kraft	3	Substitution			4,121	5,303	2,119	0	3,184
GA	Mcintosh	1	Substitution	6,611	5,713	7,146	8,828	5,713	0	3,115
GA	Mitchell	3	Substitution	3,570	4,129	10,792	18,014	4,129	0	13,885
GA	Wansley	1	Table 1	26,797	33,612	68,908	68,356	33,612	0	34,744
GA	Wansley	2	Table 1	27,004	37,059	113,801	70,233	37,059	0	33,174
GA	Yates	Y1BR	Table 1	118	103	7,863	15,433	103	0	15,330
GA	Yates	CS001 (Y2BR, Y3BR)		4,054	4,869					
GA	Yates	Y2BR	Table 1			6,855	11,683	2,434	0	9,249
GA	Yates	Y3BR	Table 1			6,767	11,507	2,435	0	9,072
GA	Yates	CS002 (Y4BR, Y5BR)		3,879	5,211					
GA	Yates	Y4BR	Table 1			8,676	15,413	2,605	0	12,808
GA	Yates	Y5BR	Table 1			9,162	16,384	2,606	0	13,778
GA	Yates	Y6BR	Table 1	6,535	7,139	28,726	41,954	7,139	0	34,815
GA	Yates	Y7BR	Table 1	5,683	6,786	22,318	30,660	6,786	0	23,874
IA	Burlington	1	Table 1	9,020	6,309	10,428	11,541	6,309	0	5,232
IA	Des Moines	11	Table 1	0	0	2,259	0	0	0	0
IA	George Neal North	1	Table 1	3,812	3,782	2,571	7,248	3,782	0	3,466
IA	Milton L Kapp	2	Table 1	7,450	5,989	13,437	19,424	5,989	0	13,435
IA	Prairie Creek	4	Table 1	5,279	2,744	7,965	10,357	2,744	0	7,613
IA	Riverside	9	Table 1	1,828	2,285	3,885	5,942	2,285	0	3,657
IL	Baldwin	1	Table 1	75,044	92,492	46,052	100,906	92,492	0	8,414
IL	Baldwin	2	Table 1	104,172	75,793	48,695	77,885	75,793	0	2,092
IL	Baldwin	3	Table 1	86,789	105,553	46,644	107,558	105,553	0	2,005
IL	Coffeen	CS0001 (1, 2)		31,228	43,755					
IL	Coffeen	1	Table 1			12,925	15,046	14,862	0	184
IL	Coffeen	2	Table 1			39,102	29,181	28,893	0	288
IL	Collins	CS1230 (1, 2, 3)		375	1,237					
IL	Collins	1	Substitution			1,217	2,399	413	0	1,986
IL	Collins	2	Substitution			1,050	2,004	412	0	1,592

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions 1995 (b)	SO2 Emissions 1996 (b)	1996 Allowances Allocated (c)	Held in Unit Accounts as of 1/30/97	Allowances Deducted for Emissions (d)	Deducted Under Special Phase I Provisions (e)	Allowances Carried Over to 1997
IL	Collins	3	Substitution			1,856	3,636	412	0	3,224
IL	Collins	CS0405 (4, 5)		2,708	1,704					
IL	Collins	4	Substitution			1,555	1,555	852	0	703
IL	Collins	5	Substitution			1,722	1,722	852	0	870
IL	Grand Tower	7	Substitution	1,043	3,271	1,068	3,393	3,271	0	122
IL	Grand Tower	8	Substitution	1,017	2,686	1,015	2,863	2,686	0	177
IL	Grand Tower	9	Table 1	6,950	13,596	6,479	14,289	13,596	0	693
IL	Havana	1	Substitution	0	0	34	0	0	0	0
IL	Havana	2	Substitution	0	0	43	0	0	0	0
IL	Havana	3	Substitution	0	0	34	0	0	0	0
IL	Havana	4	Substitution	0	0	34	0	0	0	0
IL	Havana	5	Substitution	0	0	34	0	0	0	0
IL	Havana	6	Substitution	0	0	34	0	0	0	0
IL	Havana	7	Substitution	0	0	34	0	0	0	0
IL	Havana	8	Substitution	0	0	34	0	0	0	0
IL	Hennepin	1	Substitution	9,215	7,794	10,012	8,774	7,794	0	980
IL	Hennepin	2	Table 1	27,560	39,842	20,182	41,099	39,842	0	1,257
IL	Hutsonville	5	Substitution	4,455	10,772	9,661	10,867	10,772	0	95
IL	Hutsonville	6	Substitution	3,355	8,529	9,837	8,719	8,529	0	190
IL	Joliet 9	5	Substitution	3,274	1,967	5,595	5,595	1,967	0	3,628
IL	Joppa Steam	CS1 (1, 2)		8,090	8,572					
IL	Joppa Steam	1	Table 1			12,259	20,473	4,286	0	16,187
IL	Joppa Steam	2	Table 1			10,487	16,929	4,286	0	12,643
IL	Joppa Steam	CS2 (3, 4)		7,692	8,071					
IL	Joppa Steam	3	Table 1			11,947	20,048	4,035	0	16,013
IL	Joppa Steam	4	Table 1			11,061	18,276	4,036	0	14,240
IL	Joppa Steam	CS3 (5, 6)		12,166	8,644					
IL	Joppa Steam	5	Table 1			11,119	16,155	4,322	0	11,833
IL	Joppa Steam	6	Table 1			10,341	14,599	4,322	0	10,277
IL	Kincaid	CS0102 (1, 2)		11,170	20,051					
IL	Kincaid	1	Table 1			34,564	62,043	10,025	0	52,018
IL	Kincaid	2	Table 1			37,063	68,541	10,026	0	58,515
IL	Meredosia	CS0001 (1, 2, 3, 4)		4,022	6,672					
IL	Meredosia	1	Substitution			1,245	2,155	2,090	0	65
IL	Meredosia	2	Substitution			1,355	1,731	1,426	0	305
IL	Meredosia	3	Substitution			1,173	1,407	1,334	0	73
IL	Meredosia	4	Substitution			1,078	1,887	1,822	0	65
IL	Meredosia	5	Table 1	19,610	15,943	15,227	16,044	15,943	0	101
IL	Meredosia	6	Substitution	63	112	44	175	112	0	63
IL	Newton	1	Substitution	11,221	11,148	14,599	11,477	11,148	0	329
IL	Newton	2	Substitution	12,258	15,404	6,346	15,853	15,404	0	449
IL	Vermilion	CS3 (1, 2)		2,623	579					
IL	Vermilion	1	Substitution			12,972	317	160	0	157

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions 1995 (b)	SO2 Emissions 1996 (b)	1996 Allowances Allocated (c)	Held in Unit Accounts as of 1/30/97	Allowances Deducted for Emissions (d)	Deducted Under Special Phase I Provisions (e)	Allowances Carried Over to 1997
IL	Vermilion	2	Table 1			9,735	573	419	0	154
IL	Wood River	1	Substitution	0	0	0	0	0	0	0
IN	Bailly	XS12 (7, 8)		6,246	3,835					
IN	Bailly	7	Table 1			30,088	18,333	1,576	0	16,757
IN	Bailly	8	Table 1			39,951	37,020	2,259	0	34,761
IN	Breed	1	Table 1	0	0	20,280	35,087	0	0	35,087
IN	Cayuga	1	Table 1	44,666	38,676	47,134	56,070	38,676	0	17,394
IN	Cayuga	2	Table 1	46,504	32,134	37,415	50,195	32,134	0	18,061
IN	Clifty Creek	CS001 (1, 2, 3)		47,634	50,661					
IN	Clifty Creek	1	Table 1			19,620	23,198	16,887	0	6,311
IN	Clifty Creek	2	Table 1			19,289	21,135	16,887	0	4,248
IN	Clifty Creek	3	Table 1			19,873	21,816	16,887	0	4,929
IN	Clifty Creek	CS002 (4, 5, 6)		43,870	53,668					
IN	Clifty Creek	4	Table 1			19,552	23,236	17,890	0	5,346
IN	Clifty Creek	5	Table 1			18,851	22,564	17,889	0	4,675
IN	Clifty Creek	6	Table 1			19,844	23,557	17,889	0	5,668
IN	Elmer W Stout	50	Table 1	5,282	6,045	4,253	6,249	6,045	0	204
IN	Elmer W Stout	60	Table 1	6,151	5,466	5,229	5,651	5,466	0	185
IN	Elmer W Stout	70	Table 1	27,424	26,764	25,883	26,819	26,764	0	55
IN	F B Culley	XS23 (2, 3)		2,549	4,800					
IN	F B Culley	2	Table 1			4,703	6,857	4,800	0	2,057
IN	F B Culley	3	Table 1			18,603	5,661	0	0	5,661
IN	Frank E Ratts	1SG1	Table 1	10,038	5,284	9,131	10,774	5,284	823	4,667
IN	Frank E Ratts	2SG1	Table 1	10,604	8,066	9,296	9,478	8,066	0	1,412
IN	Gibson	CS0003 (1, 2)		99,980	91,546					
IN	Gibson	1	Table 1			44,288	59,319	43,419	0	15,900
IN	Gibson	2	Table 1			44,956	60,447	48,127	0	12,320
IN	Gibson	3	Table 1	60,912	35,273	45,033	59,257	35,273	0	23,984
IN	Gibson	4	Table 1	3,783	8,993	56,010	65,038	8,993	0	56,045
IN	H T Pritchard	CS596 (5, 6)		5,932	7,068					
IN	H T Pritchard	5	Substitution			1,458	1,557	1,449	0	108
IN	H T Pritchard	6	Table 1			6,325	5,734	5,619	0	115
IN	Michigan City	12	Table 1	12,261	14,841	48,963	70,782	14,841	0	55,941
IN	Petersburg	1	Table 1	21,305	10,473	18,011	10,878	10,473	0	405
IN	Petersburg	2	Table 1	41,356	16,002	35,496	16,524	16,002	0	522
IN	R Gallagher	CS0001 (1, 2)		25,393	21,609					
IN	R Gallagher	1	Table 1			13,908	16,689	9,367	0	7,322
IN	R Gallagher	2	Table 1			12,644	15,557	12,242	0	3,315
IN	R Gallagher	CS0002 (3, 4)		26,237	28,826					
IN	R Gallagher	3	Table 1			13,127	18,656	15,120	0	3,536

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions 1995 (b)	SO2 Emissions 1996 (b)	1996 Allowances Allocated (c)	Held in Unit Accounts as of 1/30/97	Allowances Deducted for Emissions (d)	Deducted Under Special Phase I Provisions (e)	Allowances Carried Over to 1997
IN	R Gallagher	4	Table 1			12,512	17,003	13,706	0	3,297
IN	Tanners Creek	U4	Table 1	29,318	59,876	27,209	142,139	59,876	0	82,263
IN	Wabash River	1	Table 1	197	4,197	5,558	6,851	4,197	0	2,654
IN	Wabash River	CS0005 (2, 3, 5, 6)		28,211	38,986					
IN	Wabash River	2	Table 1			5,874	7,956	5,891	0	2,065
IN	Wabash River	3	Table 1			4,111	10,048	5,425	0	4,623
IN	Wabash River	5	Table 1			4,838	6,624	5,245	0	1,379
IN	Wabash River	6	Table 1			17,362	27,709	22,425	0	5,284
IN	Warrick	XS123 (1, 2, 3)		0	37,290					
IN	Warrick	3	Opt-In			13,777	14,377	14,184	0	193
IN	Warrick	1	Opt-In			15,272	14,378	13,278	0	1,100
IN	Warrick	2	Opt-In			15,895	15,295	9,828	4,406	1,061
IN	Warrick	4	Table 1	37,682	55,629	29,577	58,410	55,629	0	2,781
KS	La Cygne	1	Substitution	3,872	6,372	23,489	8,811	6,372	0	2,439
KS	Quindaro	2	Table 1	2,893	1,715	4,109	5,325	1,715	1,082	2,528
KY	Coleman	C1	Table 1	15,759	17,749	20,912	19,842	17,749	0	2,093
KY	Coleman	C2	Table 1	18,500	19,919	19,363	22,250	19,919	0	2,331
KY	Coleman	C3	Table 1	18,013	19,488	16,205	21,778	19,488	0	2,290
KY	Cooper	CS1 (1, 2)		18,389	16,652					
KY	Cooper	1	Table 1			7,254	8,440	5,495	0	2,945
KY	Cooper	2	Table 1			14,917	17,513	11,157	0	6,356
KY	E W Brown	1	Table 1	4,259	5,500	6,923	19,939	5,500	0	14,439
KY	E W Brown	CS003 (2, 3)		23,446	33,012					
KY	E W Brown	2	Table 1			12,121	31,653	9,376	0	22,277
KY	E W Brown	3	Table 1			35,334	77,152	23,636	0	53,516
KY	East Bend	2	Substitution	11,378	11,023	17,447	21,385	11,023	0	10,362
KY	Elmer Smith	XS12 (1, 2)		7,855	6,280					
KY	Elmer Smith	1	Table 1			6,348	2,743	1,884	0	859
KY	Elmer Smith	2	Table 1			14,031	6,402	4,396	0	2,006
KY	Ghent	1	Table 1	8,311	7,484	63,448	66,421	7,484	0	58,937
KY	Green River	5	Table 1	10,448	10,192	15,597	26,636	10,192	0	16,444
KY	H L Spurlock	1	Table 1	15,297	13,334	22,181	30,727	13,334	0	17,393
KY	Hmp&L Station 2	H1	Table 1	10,616	2,315	19,533	8,646	2,315	0	6,331
KY	Hmp&L Station 2	H2	Table 1	10,616	3,578	19,180	8,285	3,578	0	4,707
KY	Paradise	3	Table 1	155,612	146,291	135,688	185,000	146,291	0	38,709
KY	R D Green	G1	Substitution	1,580	1,085	5,041	8,502	1,085	0	7,417
KY	R D Green	G2	Substitution	1,689	2,314	6,073	10,457	2,314	0	8,143

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions 1995 (b)	SO2 Emissions 1996 (b)	1996 Allowances Allocated (c)	Held in Unit Accounts as of 1/30/97	Allowances Deducted for Emissions (d)	Deducted Under Special Phase I Provisions (e)	Allowances Carried Over to 1997
KY	Shawnee	10	Table 1	2,953	2,399	9,902	16,851	2,399	0	14,452
MA	Brayton Point	1	Compensating	11,739	9,045	15,085	15,121	9,045	0	6,076
MA	Mount Tom	1	Substitution	8,223	7,314	10,708	13,193	7,314	2,632	3,247
MD	C P Crane	1	Table 1	6,138	15,581	12,492	49,730	15,581	0	34,149
MD	C P Crane	2	Table 1	6,024	13,163	8,987	16,296	13,163	0	3,133
MD	Chalk Point	CSE12 (1, 2)		41,087	37,211					
MD	Chalk Point	1	Table 1			25,403	24,559	19,941	0	4,618
MD	Chalk Point	2	Table 1			23,690	20,094	17,270	0	2,824
MD	Chalk Point	3	Substitution	3,010	2,678	18,000	14,990	2,678	0	12,312
MD	Chalk Point	4	Substitution	1,354	1,354	1,519	1,625	1,354	0	271
MD	Morgantown	1	Table 1	28,040	37,236	39,864	44,683	37,236	0	7,447
MD	Morgantown	2	Table 1	38,515	35,542	45,592	42,650	35,542	0	7,108
MD	R P Smith	9	Substitution	118	78	386	100	78	0	22
MD	R P Smith	11	Substitution	1,536	2,069	3,128	2,276	2,069	0	207
MI	Dan E Karn	1	Substitution	7,272	9,765	10,151	10,741	9,765	0	976
MI	Dan E Karn	2	Substitution	11,137	9,506	10,984	10,736	9,506	0	1,230
MI	J C Weadock	CS0009 (7, 8)		11,789	10,792					
MI	J C Weadock	7	Substitution			5,473	5,902	5,102	0	800
MI	J C Weadock	8	Substitution			5,451	6,259	5,690	0	569
MI	J H Campbell	CS0009 (1, 2)		13,171	22,771					
MI	J H Campbell	1	Table 1			18,773	10,825	9,841	0	984
MI	J H Campbell	2	Table 1			22,453	14,223	12,930	0	1,293
MI	J H Campbell	3	Substitution	27,198	22,141	25,847	27,084	22,141	0	4,943
MI	J R Whiting	1	Substitution	4,244	3,538	4,188	4,543	3,538	0	1,005
MI	J R Whiting	3	Substitution	4,807	4,236	5,498	5,956	4,236	0	1,720
MN	High Bridge	CS0001 (3, 4, 5, 6)		3,040	3,768					
MN	High Bridge	3	Substitution			1,771	3,304	300	0	3,004
MN	High Bridge	4	Substitution			1,326	2,225	407	0	1,818
MN	High Bridge	5	Substitution			2,436	3,984	1,084	0	2,900
MN	High Bridge	6	Table 1			4,158	6,784	1,977	0	4,807
MN	Sherburne County	CS1 (1, 2)		9,463	10,156					
MN	Sherburne County	1	Substitution			10,420	16,232	5,076	0	11,156
MN	Sherburne County	2	Substitution			10,493	16,131	5,080	0	11,051
MO	Asbury	1	Table 1	8,112	6,339	15,764	22,770	6,339	1,019	15,412
MO	Hawthorn	5	Substitution	5,634	8,352	25,734	8,770	8,352	0	418
MO	James River	3	Substitution	744	2,358	3,802	6,860	2,358	0	4,502
MO	James River	4	Substitution	966	4,874	6,828	10,690	4,874	0	5,816
MO	James River	5	Table 1	2,054	8,513	4,722	9,390	8,513	0	877

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

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MO	Labadie	1	Table 1	23,321	11,681	39,055	12,789	11,681	0	1,108
MO	Labadie	2	Table 1	23,236	6,899	36,718	38,481	6,899	0	31,582
MO	Labadie	3	Table 1	38,025	51,536	39,249	56,723	51,536	0	5,187
MO	Labadie	4	Table 1	44,223	36,790	34,994	40,465	36,790	0	3,675
MO	Meramec	1	Substitution	1,852	3,344	1,816	3,730	3,344	0	386
MO	Meramec	2	Substitution	1,209	3,522	1,948	3,887	3,522	0	365
MO	Meramec	3	Substitution	4,702	5,682	4,166	6,230	5,682	0	548
MO	Meramec	4	Substitution	5,161	4,678	4,507	5,153	4,678	0	475
MO	Montrose	1	Table 1	2,317	2,877	7,196	3,021	2,877	0	144
MO	Montrose	CS023 (2, 3)		5,644	5,431					
MO	Montrose	2	Table 1			7,984	3,022	2,878	0	144
MO	Montrose	3	Table 1			9,824	2,681	2,553	0	128
MO	New Madrid	1	Table 1	8,827	8,855	27,497	46,167	8,855	0	37,312
MO	New Madrid	2	Table 1	7,926	8,007	31,625	32,624	8,007	0	24,617
MO	Rush Island	1	Substitution	21,412	13,225	26,935	32,458	13,225	0	19,233
MO	Rush Island	2	Substitution	22,209	14,044	30,146	38,083	14,044	0	24,039
MO	Sibley	CS0001 (1, 2, 3)		12,214	17,893					
MO	Sibley	1	Substitution			2,782	4,127	1,789	0	2,338
MO	Sibley	2	Substitution			3,332	5,206	1,789	0	3,417
MO	Sibley	3	Table 1			15,170	21,179	14,315	0	6,864
MO	Sioux	1	Table 1	27,477	22,358	21,976	24,652	22,358	0	2,294
MO	Sioux	2	Table 1	20,379	34,038	23,067	37,455	34,038	0	3,417
MO	Southwest	1	Substitution	2,144	3,066	3,922	5,700	3,066	0	2,634
MO	Thomas Hill	MB1	Table 1	2,817	2,934	9,980	13,143	2,934	0	10,209
MO	Thomas Hill	MB2	Table 1	3,749	4,685	18,880	12,011	4,685	0	7,326
MO	Thomas Hill	MB3	Substitution	10,404	9,798	14,011	17,618	9,798	0	7,820
MS	Jack Watson	4	Table 1	18,577	19,627	17,439	22,075	19,627	0	2,448
MS	Jack Watson	5	Table 1	38,044	43,588	35,734	47,015	43,588	0	3,427
MS	R D Morrow	1	Substitution	2,914	4,847	4,571	5,626	4,847	0	779
MS	R D Morrow	2	Substitution	3,618	3,749	5,002	5,936	3,749	0	2,187
MS	Victor J Daniel Jr	2	Substitution	10,168	9,476	9,851	11,889	9,476	0	2,413
NH	Merrimack	1	Table 1	10,450	10,606	9,922	11,072	10,606	0	466
NH	Merrimack	2	Table 1	25,678	24,037	21,421	24,464	24,037	0	427
NH	Newington	1	Substitution	11,155	9,291	20,127	29,099	9,291	6,147	13,661
NJ	B L England	1	Table 1	18,101	18,568	14,365	24,151	18,568	0	5,583
NJ	B L England	2	Table 1	3,619	1,752	18,357	3,505	1,752	0	1,753
NY	Dunkirk	CS0003 (3, 4)		34,621	31,867					
NY	Dunkirk	3	Table 1			12,268	30,791	16,449	0	14,342

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions 1995 (b)	SO2 Emissions 1996 (b)	1996 Allowances Allocated (c)	Held in Unit Accounts as of 1/30/97	Allowances Deducted for Emissions (d)	Deducted Under Special Phase I Provisions (e)	Allowances Carried Over to 1997
NY	Dunkirk	4	Table 1			13,690	24,047	15,418	0	8,629
NY	Greenidge	6	Table 1	9,824	7,144	7,342	27,860	7,144	0	20,716
NY	Milliken	XS12 (1, 2)		9,376	4,471					
NY	Milliken	1	Table 1			10,876	14,743	2,348	0	12,395
NY	Milliken	2	Table 1			12,083	12,418	2,123	0	10,295
NY	Northport	1	Table 1	4,114	6,060	19,289	12,926	6,060	254	6,612
NY	Northport	2	Table 1	2,228	3,484	23,476	9,651	3,484	0	6,167
NY	Northport	3	Table 1	4,047	4,649	25,783	11,978	4,649	0	7,329
NY	Northport	4	Substitution	538	1,384	5,516	5,994	1,384	23	4,587
NY	Oswego	4	Substitution	0	0	371	750	0	0	750
NY	Oswego	5	Substitution	0	0	12,365	17,263	0	0	17,263
NY	Oswego	6	Substitution	837	772	4,499	7,342	772	0	6,570
NY	Port Jefferson	3	Table 1	3,640	2,835	10,194	5,743	2,835	0	2,908
NY	Port Jefferson	4	Table 1	2,636	4,499	12,006	9,360	4,499	0	4,861
NY	Roseton	1	Substitution	1,607	2,903	19,147	19,147	2,903	1,631	14,613
NY	Roseton	2	Substitution	2,381	4,021	16,872	16,872	4,021	1,030	11,821
OH	Acme	13	Substitution	0	0	9	0	0	0	0
OH	Acme	14	Substitution	0	0	13	0	0	0	0
OH	Acme	15	Substitution	0	0	17	0	0	0	0
OH	Acme	16	Substitution	0	0	1,930	0	0	0	0
OH	Acme	91	Substitution	0	0	740	0	0	0	0
OH	Acme	92	Substitution	0	0	662	0	0	0	0
OH	Ashtabula	7	Table 1	18,183	41,910	18,351	45,954	41,910	0	4,044
OH	Avon Lake	9	Substitution	2,594	1,231	8,763	1,718	1,231	0	487
OH	Avon Lake	10	Substitution	3,309	3,668	7,879	4,218	3,668	0	550
OH	Avon Lake	11	Table 1	0	0	12,771	0	0	0	0
OH	Avon Lake	12	Table 1	21,921	27,863	33,413	31,405	27,863	0	3,542
OH	Bay Shore	CS5 (1, 2, 3, 4)		25,051	25,025					
OH	Bay Shore	1	Substitution			7,414	6,414	5,005	0	1,409
OH	Bay Shore	2	Substitution			6,957	5,957	5,005	0	952
OH	Bay Shore	3	Substitution			7,585	6,585	6,006	0	579
OH	Bay Shore	4	Substitution			12,481	11,481	9,009	0	2,472
OH	Cardinal	1	Table 1	83,160	76,138	84,106	79,945	76,138	0	3,807
OH	Cardinal	2	Table 1	22,146	28,212	42,008	63,387	28,212	0	35,175
OH	Conesville	CS012 (1, 2)		19,753	25,264					
OH	Conesville	1	Table 1			8,924	18,939	12,017	0	6,922
OH	Conesville	2	Table 1			5,360	13,909	13,247	0	662
OH	Conesville	3	Table 1	8,125	12,794	12,593	18,331	12,794	0	5,537
OH	Conesville	4	Table 1	62,940	58,778	53,463	76,313	58,778	0	17,535
OH	Eastlake	1	Table 1	8,635	13,095	8,551	14,467	13,095	0	1,372

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions 1995 (b)	SO2 Emissions 1996 (b)	1996 Allowances Allocated (c)	Held in Unit Accounts as of 1/30/97	Allowances Deducted for Emissions (d)	Deducted Under Special Phase I Provisions (e)	Allowances Carried Over to 1997
OH	Eastlake	2	Table 1	13,025	13,779	9,471	15,217	13,779	0	1,438
OH	Eastlake	3	Table 1	14,451	10,599	10,984	12,267	10,599	0	1,668
OH	Eastlake	4	Table 1	23,405	22,538	15,906	24,809	22,538	0	2,271
OH	Eastlake	5	Table 1	57,855	60,719	42,495	66,063	60,719	0	5,344
OH	Edgewater	11	Substitution	0	0	1,062	0	0	0	0
OH	Edgewater	12	Substitution	0	0	1,145	0	0	0	0
OH	Edgewater	13	Table 1	10	4	5,536	1,036	4	0	1,032
OH	Gen J M Gavin	1	Table 1	11,945	28,370	192,637	29,789	28,370	0	1,419
OH	Gen J M Gavin	2	Table 1	11,533	40,672	188,168	51,449	40,672	0	10,777
OH	Gorge	25	Substitution	0	0	2,553	0	0	0	0
OH	Gorge	26	Substitution	0	0	2,860	0	0	0	0
OH	J M Stuart	1	Substitution	22,861	22,910	41,189	46,681	22,910	0	23,771
OH	J M Stuart	2	Substitution	31,903	28,054	39,041	40,631	28,054	0	12,577
OH	J M Stuart	3	Substitution	25,034	25,957	38,712	42,976	25,957	0	17,019
OH	J M Stuart	4	Substitution	27,841	22,226	40,925	43,222	22,226	0	20,996
OH	Kyger Creek	CS001 (1, 2, 3, 4, 5)		92,806	123,599					
OH	Kyger Creek	1	Table 1			18,773	25,148	24,719	0	429
OH	Kyger Creek	2	Table 1			18,072	25,148	24,720	0	428
OH	Kyger Creek	3	Table 1			17,439	25,148	24,720	0	428
OH	Kyger Creek	4	Table 1			18,218	25,148	24,720	0	428
OH	Kyger Creek	5	Table 1			18,247	25,148	24,720	0	428
OH	Lake Shore	18	Substitution	0	1,433	4,508	2,180	1,433	0	747
OH	Lake Shore	91	Substitution	0	0	44	0	0	0	0
OH	Lake Shore	92	Substitution	0	0	80	0	0	0	0
OH	Lake Shore	93	Substitution	0	0	62	0	0	0	0
OH	Lake Shore	94	Substitution	0	0	102	0	0	0	0
OH	Miami Fort	CS056 (5-1, 5-2, 6)		4,193	14,421					
OH	Miami Fort	5-1	Table 1			417	761	530	0	231
OH	Miami Fort	5-2	Table 1			417	762	531	0	231
OH	Miami Fort	6	Table 1			12,475	22,889	13,360	0	9,529
OH	Miami Fort	7	Table 1	21,301	38,985	42,216	53,170	38,985	0	14,185
OH	Muskingum River	CS014 (1, 2, 3, 4)		102,908	160,368					
OH	Muskingum River	1	Table 1			38,001	49,026	35,477	0	13,549
OH	Muskingum River	2	Table 1			34,026	41,533	39,555	0	1,978
OH	Muskingum River	3	Table 1			36,130	45,741	43,563	0	2,178
OH	Muskingum River	4	Table 1			34,153	43,862	41,773	0	2,089
OH	Muskingum River	5	Table 1	14,648	20,223	44,364	74,080	20,223	0	53,857
OH	Niles	1	Table 1	13,080	7,110	18,504	12,608	7,110	0	5,498
OH	Niles	2	Table 1	12,340	15,375	14,321	20,249	15,375	0	4,874
OH	Picway	9	Table 1	4,722	15,071	11,967	17,843	15,071	0	2,772
OH	Poston	1	Substitution	0	0	0	3,797	0	0	3,797
OH	Poston	2	Substitution	0	0	0	3,542	0	0	3,542

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions 1995 (b)	SO2 Emissions 1996 (b)	1996 Allowances Allocated (c)	Held in Unit Accounts as of 1/30/97	Allowances Deducted for Emissions (d)	Deducted Under Special Phase I Provisions (e)	Allowances Carried Over to 1997
OH	Poston	3	Substitution	0	0	0	4,642	0	0	4,642
OH	R E Burger	CS0001 (1, 2, 3, 4, 5, 6, 7,8)		41,658	62,557					
OH	R E Burger	1	Substitution			2,820	0	0	0	0
OH	R E Burger	2	Substitution			2,751	0	0	0	0
OH	R E Burger	3	Substitution			2,891	0	0	0	0
OH	R E Burger	4	Substitution			2,956	0	0	0	0
OH	R E Burger	5	Table 1			4,797	3,371	950	0	2,421
OH	R E Burger	6	Table 1			4,807	3,371	958	0	2,413
OH	R E Burger	7	Table 1			21,973	38,245	33,743	0	4,502
OH	R E Burger	8	Table 1			23,127	31,751	26,906	0	4,845
OH	Toronto	9	Substitution	0	0	5,315	0	0	0	0
OH	Toronto	10	Substitution	0	0	9,505	0	0	0	0
OH	Toronto	11	Substitution	0	0	10,274	0	0	0	0
OH	W H Sammis	5	Table 1	12,627	12,247	26,496	26,496	12,247	0	14,249
OH	W H Sammis	6	Table 1	27,041	30,444	43,773	43,773	30,444	0	13,329
OH	W H Sammis	7	Table 1	22,162	27,966	47,380	47,380	27,966	0	19,414
OH	Walter C Beckjord	5	Table 1	8,347	22,761	9,811	26,843	22,761	0	4,082
OH	Walter C Beckjord	6	Table 1	17,479	40,041	25,235	46,790	40,041	0	6,749
PA	Armstrong	1	Table 1	4,711	16,496	17,738	18,146	16,496	0	1,650
PA	Armstrong	2	Table 1	17,196	15,654	15,024	17,219	15,654	0	1,565
PA	Bruce Mansfield	1	Substitution	7,388	5,831	10,510	14,898	5,831	0	9,067
PA	Bruce Mansfield	2	Substitution	5,532	8,159	11,537	15,926	8,159	0	7,767
PA	Brunner Island	CS102 (1, 2)		41,061	47,771					
PA	Brunner Island	1	Table 1			27,030	33,530	22,672	0	10,858
PA	Brunner Island	2	Table 1			31,995	40,033	25,099	0	14,934
PA	Brunner Island	3	Table 1	56,335	44,832	60,571	106,089	44,832	0	61,257
PA	Cheswick	1	Table 1	42,900	39,980	38,139	42,819	39,980	0	2,839
PA	Conemaugh	1	Table 1	4,729	3,376	95,378	20,054	3,376	0	16,678
PA	Conemaugh	2	Table 1	73,364	3,732	85,753	20,128	3,732	0	16,396
PA	Hatfield's Ferry	XS123 (1, 2, 3)		164,841	153,413					
PA	Hatfield's Ferry	1	Table 1			55,732	58,400	52,602	0	5,798
PA	Hatfield's Ferry	2	Table 1			57,506	63,200	55,722	0	7,478
PA	Hatfield's Ferry	3	Table 1			56,580	52,500	45,089	0	7,411
PA	Martins Creek	CS102 (1, 2)		10,762	24,601					
PA	Martins Creek	1	Table 1			12,327	19,273	14,046	0	5,227
PA	Martins Creek	2	Table 1			12,483	19,585	10,555	0	9,030
PA	Martins Creek	3	Substitution	3,045	2,442	12,553	12,553	2,442	0	10,111
PA	Martins Creek	4	Substitution	3,455	3,016	11,548	11,548	3,016	0	8,532
PA	Mitchell	33	Substitution	835	728	1,101	800	728	0	72
PA	New Castle	1	Substitution	0	0	1,367	1,367	0	0	1,367

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions 1995 (b)	SO2 Emissions 1996 (b)	1996 Allowances Allocated (c)	Held in Unit Accounts as of 1/30/97	Allowances Deducted for Emissions (d)	Deducted Under Special Phase I Provisions (e)	Allowances Carried Over to 1997
PA	New Castle	2	Substitution	0	0	1,520	1,520	0	0	1,520
PA	Portland	1	Table 1	11,088	11,963	9,373	36,932	11,963	0	24,969
PA	Portland	2	Table 1	11,055	13,820	17,309	14,367	13,820	0	547
PA	Shawville	1	Table 1	14,265	10,587	10,048	12,332	10,587	0	1,745
PA	Shawville	2	Table 1	10,837	13,474	10,048	15,349	13,474	0	1,875
PA	Shawville	CS1 (3, 4)		33,302	29,884					
PA	Shawville	3	Table 1			13,846	20,541	16,950	0	3,591
PA	Shawville	4	Table 1			13,700	15,988	12,934	0	3,054
PA	Sunbury	3	Table 1	9,847	9,511	9,133	16,327	9,511	0	6,816
PA	Sunbury	4	Table 1	9,511	10,939	11,392	14,114	10,939	0	3,175
TN	Allen	1	Table 1	13,144	5,434	14,917	22,546	5,434	0	17,112
TN	Allen	2	Table 1	16,512	6,503	16,329	24,584	6,503	0	18,081
TN	Allen	3	Table 1	18,618	8,395	15,258	24,564	8,395	0	16,169
TN	Cumberland	1	Table 1	12,445	9,524	165,080	168,310	9,524	0	158,786
TN	Cumberland	2	Table 1	13,685	13,252	172,416	152,615	13,252	0	139,363
TN	DuPont Johnsonville	JVD1	Opt-In	0	0	889	0	0	0	0
TN	DuPont Johnsonville	JVD2	Opt-In	0	0	889	0	0	0	0
TN	DuPont Johnsonville	JVD3	Opt-In	0	0	889	0	0	0	0
TN	DuPont Johnsonville	JVD4	Opt-In	0	0	888	0	0	0	0
TN	Gallatin	CSGA12 (1, 2)		47,243	55,363					
TN	Gallatin	1	Table 1			32,218	37,170	25,853	0	11,317
TN	Gallatin	2	Table 1			31,674	37,187	29,510	0	7,677
TN	Gallatin	CSGA34 (3, 4)		51,122	61,303					
TN	Gallatin	3	Table 1			36,179	42,080	28,130	0	13,950
TN	Gallatin	4	Table 1			33,879	40,685	33,173	0	7,512
TN	Johnsonville	CSJO10 (1, 2, 3, 4, 5, 6, 7, 8, 9, 10)		114,677	126,367					
TN	Johnsonville	1	Table 1			7,585	15,107	12,644	0	2,463
TN	Johnsonville	2	Table 1			7,828	19,542	12,424	0	7,118
TN	Johnsonville	3	Table 1			8,189	15,919	13,242	0	2,677
TN	Johnsonville	4	Table 1			7,780	14,752	12,691	0	2,061
TN	Johnsonville	5	Table 1			8,023	10,837	8,304	0	2,533
TN	Johnsonville	6	Table 1			7,682	15,135	12,141	0	2,994
TN	Johnsonville	7	Table 1			8,744	17,287	14,684	0	2,603
TN	Johnsonville	8	Table 1			8,471	19,543	15,003	0	4,540
TN	Johnsonville	9	Table 1			6,894	13,231	11,140	0	2,091
TN	Johnsonville	10	Table 1			7,351	16,667	14,094	0	2,573
WI	Alma	CS1 (B4, B5)		2,764	3,471					
WI	Alma	B4	Substitution			5,105	9,458	1,736	630	7,092
WI	Alma	B5	Substitution			8,155	14,928	1,735	0	13,193
WI	Edgewater	3	Substitution	1,166	1,482	4,493	7,820	1,482	0	6,338
WI	Edgewater	4	Table 1	6,482	7,378	24,099	22,249	7,378	0	14,871
WI	Genoa	1	Table 1	15,304	11,420	22,103	18,598	11,420	0	7,178

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

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WI	J P Madgett	B1	Substitution	5,746	4,145	6,862	7,978	4,145	0	3,833
WI	Nelson Dewey	CS1 (1, 2)		4,127	3,836					
WI	Nelson Dewey	1	Table 1			5,852	4,764	1,880	0	2,884
WI	Nelson Dewey	2	Table 1			6,504	5,821	1,956	0	3,865
WI	North Oak Creek	1	Table 1	0	0	5,083	0	0	0	0
WI	North Oak Creek	2	Table 1	0	0	5,005	0	0	0	0
WI	North Oak Creek	3	Table 1	0	0	5,229	0	0	0	0
WI	North Oak Creek	4	Table 1	0	0	6,154	0	0	0	0
WI	Port Washington	CS7 (1, 2, 3)		8,856	7,179					
WI	Port Washington	1	Substitution			1,968	1,991	1,810	0	181
WI	Port Washington	2	Substitution			3,782	2,449	2,227	0	222
WI	Port Washington	3	Substitution			3,108	3,456	3,142	0	314
WI	Port Washington	4	Substitution	2,242	1,991	2,745	2,090	1,991	0	99
WI	Port Washington	5	Substitution	0	0	3,412	0	0	0	0
WI	Pulliam	CS56 (5, 6)		1,152	1,518					
WI	Pulliam	5	Substitution			2,097	710	592	0	118
WI	Pulliam	6	Substitution			2,844	1,120	926	0	194
WI	Pulliam	7	Substitution	1,466	1,574	7,317	1,900	1,574	0	326
WI	Pulliam	8	Table 1	2,087	2,445	7,312	2,900	2,445	0	455
WI	Rock River	1	Substitution	1,637	1,337	5,398	9,159	1,337	0	7,822
WI	Rock River	2	Substitution	1,434	1,389	4,034	6,634	1,389	0	5,245
WI	South Oak Creek	CS3 (5, 6)		11,006	13,543					
WI	South Oak Creek	5	Table 1			9,416	8,976	8,160	0	816
WI	South Oak Creek	6	Table 1			11,723	5,921	5,383	0	538
WI	South Oak Creek	CS4 (7, 8)		15,663	20,718					
WI	South Oak Creek	7	Table 1			15,754	11,400	10,364	0	1,036
WI	South Oak Creek	8	Table 1			15,375	11,389	10,354	0	1,035
WI	Weston	1	Substitution	969	1,106	1,579	1,300	1,106	0	194
WI	Weston	2	Substitution	1,936	2,021	3,580	2,400	2,021	0	379
WV	Albright	1	Substitution	2,386	1,449	4,831	1,600	1,449	0	151
WV	Albright	2	Substitution	2,358	1,962	5,024	2,350	1,962	0	388
WV	Albright	3	Table 1	11,444	9,246	11,684	10,171	9,246	0	925
WV	Fort Martin	1	Table 1	26,803	33,684	41,905	37,053	33,684	0	3,369
WV	Fort Martin	2	Table 1	43,171	37,468	44,118	41,215	37,468	0	3,747
WV	Harrison	XS123 (1, 2, 3)		9,944	16,469					
WV	Harrison	1	Table 1			82,613	6,849	6,206	0	643
WV	Harrison	2	Table 1			91,180	4,341	3,969	0	372
WV	Harrison	3	Table 1			90,727	6,927	6,294	0	633
WV	Kammer	CS013 (1, 2, 3)		122,193	119,369					
WV	Kammer	1	Table 1			18,247	45,549	43,380	0	2,169
WV	Kammer	2	Table 1			18,948	58,635	36,307	0	22,328
WV	Kammer	3	Table 1			16,932	41,666	39,682	0	1,984

APPENDIX B-4: EMISSIONS AND ALLOWANCE HOLDINGS OF PHASE I UNITS

State	Plant Name	Stack/Unit ID	Unit Type (a)	SO2 Emissions 1995 (b)	SO2 Emissions 1996 (b)	1996 Allowances Allocated (c)	Held in Unit Accounts as of 1/30/97	Allowances Deducted for Emissions (d)	Deducted Under Special Phase I Provisions (e)	Allowances Carried Over to 1997
WV	Mitchell	CS012 (1, 2)		61,623	53,152					
WV	Mitchell	1	Table 1			42,823	63,555	31,201	0	32,354
WV	Mitchell	2	Table 1			44,312	53,596	21,951	0	31,645
WV	Mt Storm	CS0 (1, 2)		95,244	107,211					
WV	Mt Storm	1	Table 1			49,481	63,669	53,605	0	10,064
WV	Mt Storm	2	Table 1			45,203	61,460	53,606	0	7,854
WV	Mt Storm	3	Table 1	2,549	5,096	49,859	66,838	5,096	0	61,742
WV	Rivesville	7	Substitution	488	233	1,009	450	233	0	217
WV	Rivesville	8	Substitution	1,357	1,037	3,059	1,200	1,037	0	163
WV	Willow Island	2	Substitution	7,908	6,739	7,765	7,412	6,739	0	673
WY	Jim Bridger	BW71	Substitution	7,919	6,272	21,103	8,577	6,272	0	2,305
WY	Jim Bridger	BW72	Substitution	6,760	7,165	20,661	10,734	7,165	0	3,569
WY	Jim Bridger	BW73	Substitution	7,794	6,180	19,782	9,789	6,180	0	3,609
WY	Wyodak	BW91	Substitution	8,281	10,012	18,283	11,856	10,012	0	1,844

NOTES:

(a) Identifies the affected unit as listed in Table 1, or as a substitution or compensating unit.

(b) Both 1995 and 1996 emissions appear as reported by CEMS under the Acid Rain Program.

(c) This column lists allowances allocated under the following provisions: Initial Allocation (to Table 1 units), allowances for substitution and compensating units, Phase I Extension Allowances, Early Reduction Credits, and Conservation allowances. Only the Initial Allocation to Table 1 units and the allowances allocated to substitution and compensating units were reported in Appendix D of last year's report.

(d) This column displays the 1996 emissions for units that are not connected to a common stack. For units sharing a common stack, an apportionment was made either by the unit or by EPA to divide up the stack's emissions among the units sharing the stack.

(e) This column displays the sum of allowance deductions made for underutilization and state cap deductions.

APPENDIX B-5: COMPLIANCE DEDUCTION

Phase I affected utilities in 1996 surrendered 19,677 allowances for purposes other than emissions deductions. This is equivalent to 0.4 percent of all allowances surrendered for compliance. 10,268 of these allowances were deducted from eight units for underutilization, while 9,409 were deducted from three units under state cap provisions.

Underutilization Deductions

There is no effective SO_2 emissions cap during Phase I for units not affected by the Acid Rain Program until Phase II. Therefore, if underutilization were not taken into account, Phase I units could potentially shift their generation responsibilities to Phase II units without surrendering allowances for the additional emissions resulting at those units.

To ensure that allowances are surrendered in this instance, each Phase I unit must explain any underutilization during Phase I (1995-1999). Any Phase I unit that had a lower heat input in 1996 than the average heat input during the 1985-87 baseline years (i.e., was utilized less) must surrender allowances unless it explains this decrease by shifts in generation to sulfur-free generators (e.g., hydroelectric or nuclear generators), energy conservation, improved unit efficiency, overutilization at other Phase I units in the dispatch system, utilization of compensating units, or a decrease in dispatch system sales. If the reasons for the underutilization do not fall into one or more of these categories, then it is presumed that the Phase I unit shifted generation to sulfur-emitting Phase II units and the Phase I unit has to surrender allowances. The amount of allowances surrendered is based on the amount of unexplained underutilization and the emission rates of the Phase II units.

For 1996, allowances were deducted for underutilization at seven units in the following dispatch systems: Central Hudson Gas and Electric Corporation, Long Island Lighting Company, Hoosier Energy, City of Kansas City, and Empire District Electric Company. Roseton Unit 1 in New York once again surrendered the highest number of allowances (1,631), and Northport Unit 4, also in New York, surrendered the lowest (23 allowances).

The last unit for which allowances were deducted for underutilization was an opt-in unit for Alcoa. An opt-in source is considered to have reduced its utilization of its average utilization is below its baseline (1985 - 1987). Alcoa's Warrick Unit 2 surrendered 4,406 allowances for reduced utilization in 1996.

State Cap Deductions

Some substitution and compensating units are subject to a state-mandated, operating company-wide emissions cap (state cap), whose stringency cannot be determined until the end of the compliance year when monitoring data is available. EPA did not consider the cap when allocating allowances, but, in the case of substitution units, adjusts their allowance holdings at the end of the compliance year if the Agency determines that the cap is the more stringent limit. For compensating units, on the other hand, EPA determines if the units actually met the eligibility requirements for compensating units, and if not, "de-designates", or terminates the units as compensating units.

For substitution units:
As a general rule, if the state cap is determined to be the more stringent limit, then EPA recalculates the number of allowances that should be allocated to the unit, and any allowances received in excess of that amount are deducted from the unit's account. However, for the first year, and in some cases the second year, that units become substitution units, that unit may effectively use allowances from a future year account to cover the allowance deduction. In these instances, there will be no net deduction for state caps. (Units that are allowed this early use of future year allowances were parties to a settlement of prior litigation concerning the substitution and reduced utilization provisions.)

In applying the state caps to substitution units under the annual reconciliation process in 1996, EPA deducted 9,409 allowances at three units. One of these units, Alma Unit B4, is covered by the settlement agreement and was allowed to use future year allowances to cover its required emissions deductions of 630 allowances. In practice, these allowances were added to its 1996 account to cover 1996 deductions and simultaneously deducted from a future year account. The other two units surrendering allowances under the state cap provisions are Newington Unit 1 (6,147 allowances) and Mount Tom Unit 1 (2,632 allowances).

For compensating units:
Because the allocation of a compensating unit cannot be adjusted, EPA determines, based on the emissions and utilization of all units in the compensating unit's dispatch system, if the stringency of the state cap limit was such that the compensating unit was actually ineligible to be a compensating unit. If this is determined to be true, then the compensating unit is de-designated and its entire allowance allocation is returned to EPA, effectively terminating it as a compensating unit for the compliance year. In 1996, Brayton Point Units 2, 3, and 4 were de-designated as compensating units.

Appendix C-1: Summary List of Averaging Plan Populations and Results

Operating Utility	ORIS Code	Plant Name, State and Units	Plan Limit	Plan Rate
Alabama Power Co	26	E C Gaston AL 1-5	0.48	0.43
	7	Gadsden AL 1-2		
CIPSCO	862	Grand Tower IL 07-09	0.45	0.42
	863	Hutsonville IL 05, 06		
	864	Meredosia IL 01-05		
	6017	Newton IL 1, 2		
Dairyland Power Coop	4140	Alma WI B4, B5	0.48	0.39
	4143	Genoa WI 1		
	4271	J P Madgett WI B1		
East Kentucky Power Coop	1384	Cooper KY 1, 2	0.50	0.41
Georgia Power Co	699	Arkwright GA 1-4	0.46	0.43
	703	Bowen GA 1BLR - 4BLR		
	708	Hammond GA 1-4		
	709	Harllee Branch GA 2		
	710	Jack Mcdonough GA MB1, MB2		
	733	Kraft GA 1-3		
	6124	Mcintosh GA 1		
	727	Mitchell GA 3		
	6257	Scherer GA 3		
	6052	Wansley GA 1, 2		
	728	Yates GA Y2BR - Y7BR		
GPU	3113	Portland PA 1, 2	0.45	0.40

Appendix C-1: Summary List of Averaging Plan Populations and Results

Operating Utility	ORIS Code	Plant Name, State and Units	Plan Limit	Plan Rate
Gulf Power Co	641	Crist FL 4-6	0.47	0.41
	2049	Jack Watson MS 4, 5		
	642	Scholz FL1, 2		
	6073	Victor J Daniel Jr MS 1, 2		
Hoosier Energy	1043	Frank E Ratts IN 1SG1, 2SG1	0.50	0.47
IES Utilities, Inc.	1104	Burlington IA 1	0.47	0.31
	1073	Prairie Creek IA 4		
Illinois Power Co	889	Baldwin IL 3	0.45	0.40
	892	Hennepin IL 2		
	897	Vermilion IL 1, 2		
Indianapolis Power & Light	990	Elmer W Stout IN 50, 60, 70	0.45	0.36
	991	H T Pritchard IN 3-6		
	994	Petersburg IN 1-4		
Monongahela Power Co	3942	Albright WV 1-3	0.49	0.38
	3178	Armstrong PA 2		
	3181	Mitchell PA 33		
	6004	Pleasants PA 1, 2		
	1570	R P Smith PA 9, 11		
NYSEG	2527	Greenidge NY 6	0.45	0.41
	2535	Milliken NY 1, 2		
Northern States Power Co	1912	High Bridge MN 3-6	0.46	0.30
	6090	Sherburne County MN 1, 2		

Appendix C-1: Summary List of Averaging Plan Populations and Results

Operating Utility	ORIS Code	Plant Name, State and Units	Plan Limit	Plan Rate
Ohio Edison Co	6094	Bruce Mansfield PA 1, 2	0.50	0.42
	2857	Edgewater OH 13		
	2858	Gorge OH 25, 26		
	3138	New Castle PA 1, 2		
	2867	Toronto OH 10, 11		
	2866	W H Sammis OH 5, 6		
PP&L	3140	Brunner Island PA 1-3	0.47	0.41
	3148	Martins Creek PA 1, 2		
	3152	Sunbury PA 3, 4		
PSI Energy, Inc.	1001	Cayuga IN 1, 2	0.48	0.42
	6018	East Bend IN 2		
	6113	Gibson IN 1-3		
	2832	Miami Fort OH 6		
	1008	R Gallagher IN 1-4		
	1010	Wabash River IN 2-6		
	2830	Walter C Beckjord OH 5, 6		
South Mississippi Elec Power	6061	R D Morrow MS 1, 2	0.50	0.47
Springfield City of (MO)	2161	James River MO 3-5	0.50	0.48
	6195	Southwest MO 1		
TVA	47	Colbert AL 1-4	0.48	0.44
	3403	Gallatin TN 1-4		
	3406	Johnsonville TN 1-10		

Appendix C-1: Summary List of Averaging Plan Populations and Results

Operating Utility	ORIS Code	Plant Name, State and Units	Plan Limit	Plan Rate
Union Electric Co	2103	Labadie MO 1-4	0.45	0.25
	2104	Meramec MO 1-4		
	6155	Rush Island MO 1, 2		
Wisconsin Electric Power	4040	Port Washington WI 1-4	0.48	0.35
	4041	South Oak Creek WI 5-8		
	4042	Valley WI 1-4		
Wisconsin Public Service Corp	4072	Pulliam WI 7, 8	0.47	0.37
	4078	Weston WI 1-3		

Appendix C-2: Table 1 NO_x Affected Units with Compliance Extensions for 1996

ST	Plant Name	Operating Utility	ORIS Code	Boiler	Extension Type	Extension Date	1996 Unit Emission Rate
FL	Crist	Gulf Power Co	641	7	40 CFR Part 72	01-Jan-97	0.48
GA	Yates	Georgia Power Co	728	Y1BR	40 CFR Part 72	01-Jan-97	0.47
IN	Gibson	PSI Energy, Inc.	6113	4	40 CFR Part 72	01-Jan-97	0.35
IN	Wabash River	PSI Energy, Inc.	1010	1	40 CFR Part 72	01-Jan-97	0.29
KY	Coleman	Big Rivers Electric Corp	1381	C1	40 CFR Part 72	01-Jan-97	0.49
KY	Coleman	Big Rivers Electric Corp	1381	C2	40 CFR Part 72	01-Jan-97	0.46
KY	Coleman	Big Rivers Electric Corp	1381	C3	40 CFR Part 72	01-Jan-97	1.28
KY	E W Brown	Kentucky Utilities Co	1355	2	40 CFR Part 72	01-Jan-97	0.42
KY	E W Brown	Kentucky Utilities Co	1355	3	40 CFR Part 72	01-Jan-97	0.42
KY	Ghent	Kentucky Utilities Co	1356	1	40 CFR Part 72	01-Jan-97	0.56
KY	HMP&L Station 2	Big Rivers Electric Corp	1382	H1	40 CFR Part 72	01-Jan-97	0.83
KY	HMP&L Station 2	Big Rivers Electric Corp	1382	H2	40 CFR Part 72	01-Jan-97	0.62
MD	Chalk Point	Potomac Electric Power Co	1571	1	40 CFR Part 72	01-Jan-97	0.77
MD	Morgantown	Potomac Electric Power Co	1573	1	40 CFR Part 72	01-Jan-97	0.65
MD	Morgantown	Potomac Electric Power Co	1573	2	40 CFR Part 72	01-Jan-97	0.65
OH	R E Burger	Ohio Edison Co	2864	7	40 CFR Part 72	01-Jan-97	0.74
OH	R E Burger	Ohio Edison Co	2864	8	40 CFR Part 72	01-Jan-97	0.72
PA	Armstrong	West Penn Power Co	3178	1	40 CFR Part 72	01-Jan-97	0.36
PA	Conemaugh	GPU Generation Corporation	3118	1	40 CFR Part 72	01-Jan-97	0.43
PA	Conemaugh	GPU Generation Corporation	3118	2	40 CFR Part 72	01-Jan-97	0.40
WV	Fort Martin	Monongahela Power Co	3943	1	40 CFR Part 72	01-Jan-97	0.59
WV	Harrison	Monongahela Power Co	3944	1	40 CFR Part 72	01-Jan-97	0.47
WV	Harrison	Monongahela Power Co	3944	2	40 CFR Part 72	01-Jan-97	0.47
WV	Harrison	Monongahela Power Co	3944	3	40 CFR Part 72	01-Jan-97	0.47
WV	Mt Storm	Virginia Electric & Power Co	3954	1	40 CFR Part 76	01-Aug-97	0.84
WV	Mt Storm	Virginia Electric & Power Co	3954	2	40 CFR Part 76	01-Jan-98	0.84
WV	Mt Storm	Virginia Electric & Power Co	3954	3	40 CFR Part 76	01-Jan-97	0.79

Appendix C-3: Compliance Requirements and Results for the 239 NO_x Affected Units in 1996

ST	Plant Name	Operating Utility	ORIS Code	Boiler	Compliance Approach	1996 Emis-sion Limit	1996 Emis-sion Rate	1996 Avg Plan Limit	1996 Avg Plan Rate	1990 Emission Rate	% Change from 1990 to 1996
AL	Colbert	TVA	47	1	Averaging Plan	0.50	0.43	0.48	0.44	0.80	-46%
AL	Colbert	TVA	47	2	Averaging Plan	0.50	0.43	0.48	0.44	0.67	-36%
AL	Colbert	TVA	47	3	Averaging Plan	0.50	0.43	0.48	0.44	0.83	-48%
AL	Colbert	TVA	47	4	Averaging Plan	0.50	0.43	0.48	0.44	0.86	-50%
AL	Colbert	TVA	47	5	Averaging Plan	0.50	0.44	0.48	0.44	0.78	-44%
AL	E C Gaston	Alabama Power Co	26	1	Averaging Plan	0.50	0.40	0.48	0.43	0.90	-56%
AL	E C Gaston	Alabama Power Co	26	2	Averaging Plan	0.50	0.40	0.48	0.43	0.78	-49%
AL	E C Gaston	Alabama Power Co	26	3	Averaging Plan	0.50	0.41	0.48	0.43	0.80	-49%
AL	E C Gaston	Alabama Power Co	26	4	Averaging Plan	0.50	0.41	0.48	0.43	0.80	-49%
AL	E C Gaston	Alabama Power Co	26	5	Averaging Plan	0.45	0.43	0.48	0.43	0.78	-45%
AL	Gadsden	Alabama Power Co	7	1	Averaging Plan	0.45	0.61	0.48	0.43	0.51	20%
AL	Gadsden	Alabama Power Co	7	2	Averaging Plan	0.45	0.65	0.48	0.43	0.56	16%
FL	Big Bend	Tampa Electric Co	645	BB04	Standard Limitation	0.45	0.37			0.46	-20%
FL	Crist	Gulf Power Co	641	4	Averaging Plan	0.45	0.50	0.47	0.41	0.43	16%
FL	Crist	Gulf Power Co	641	5	Averaging Plan	0.45	0.61	0.47	0.41	0.49	24%
FL	Crist	Gulf Power Co	641	6	Averaging Plan	0.50	0.45	0.47	0.41	1.04	-57%
FL	Scholz	Gulf Power Co	642	1	Averaging Plan	0.50	0.62	0.47	0.41	0.69	-10%
FL	Scholz	Gulf Power Co	642	2	Averaging Plan	0.50	0.70	0.47	0.41	0.80	-13%
GA	Arkwright	Georgia Power Co	699	1	Averaging Plan	0.45	0.83	0.46	0.43	0.90	-8%
GA	Arkwright	Georgia Power Co	699	2	Averaging Plan	0.45	0.83	0.46	0.43	0.90	-8%
GA	Arkwright	Georgia Power Co	699	3	Averaging Plan	0.50	0.83	0.46	0.43	0.90	-8%
GA	Arkwright	Georgia Power Co	699	4	Averaging Plan	0.50	0.83	0.46	0.43	0.90	-8%
GA	Bowen	Georgia Power Co	703	1BLR	Averaging Plan	0.45	0.42	0.46	0.43	0.67	-37%
GA	Bowen	Georgia Power Co	703	2BLR	Averaging Plan	0.45	0.43	0.46	0.43	0.65	-34%
GA	Bowen	Georgia Power Co	703	3BLR	Averaging Plan	0.45	0.45	0.46	0.43	0.56	-20%
GA	Bowen	Georgia Power Co	703	4BLR	Averaging Plan	0.45	0.45	0.46	0.43	0.58	-22%
GA	Hammond	Georgia Power Co	708	1	Averaging Plan	0.50	0.78	0.46	0.43	0.84	-7%
GA	Hammond	Georgia Power Co	708	2	Averaging Plan	0.50	0.78	0.46	0.43	0.84	-7%

Appendix C-3: Compliance Requirements and Results for the 239 NO_x Affected Units in 1996

ST	Plant Name	Operating Utility	ORIS Code	Boiler	Compliance Approach	1996 Emis-sion Limit	1996 Emis-sion Rate	1996 Avg Plan Limit	1996 Avg Plan Rate	1990 Emission Rate	% Change from 1990 to 1996
GA	Hammond	Georgia Power Co	708	3	Averaging Plan	0.50	0.78	0.46	0.43	0.84	-7%
GA	Hammond	Georgia Power Co	708	4	Averaging Plan	0.50	0.45	0.46	0.43	1.20	-63%
GA	Harllee Branch	Georgia Power Co	709	2	Averaging Plan	0.50	0.74	0.46	0.43	0.99	-25%
GA	Jack Mcdonough	Georgia Power Co	710	MB1	Averaging Plan	0.45	0.40	0.46	0.43	0.66	-39%
GA	Jack Mcdonough	Georgia Power Co	710	MB2	Averaging Plan	0.45	0.40	0.46	0.43	0.60	-33%
GA	Kraft	Savannah Electric & Power	733	1	Averaging Plan	0.45	0.59	0.46	0.43	0.40	48%
GA	Kraft	Savannah Electric & Power	733	2	Averaging Plan	0.45	0.59	0.46	0.43	0.40	48%
GA	Kraft	Savannah Electric & Power	733	3	Averaging Plan	0.45	0.59	0.46	0.43	0.40	48%
GA	Mcintosh	Savannah Electric & Power	6124	1	Averaging Plan	0.50	0.81	0.46	0.43	0.83	-2%
GA	Mitchell	Georgia Power Co	727	3	Averaging Plan	0.45	0.61	0.46	0.43	0.61	0%
GA	Scherer	Georgia Power Co	6257	3	Averaging Plan	0.45	0.28	0.46	0.43	0.20	40%
GA	Wansley	Georgia Power Co	6052	1	Averaging Plan	0.45	0.39	0.46	0.43	0.73	-47%
GA	Wansley	Georgia Power Co	6052	2	Averaging Plan	0.45	0.41	0.46	0.43	0.67	-39%
GA	Yates	Georgia Power Co	728	Y2BR	Averaging Plan	0.45	0.49	0.46	0.43	0.62	-21%
GA	Yates	Georgia Power Co	728	Y3BR	Averaging Plan	0.45	0.49	0.46	0.43	0.62	-21%
GA	Yates	Georgia Power Co	728	Y4BR	Averaging Plan	0.45	0.41	0.46	0.43	0.56	-27%
GA	Yates	Georgia Power Co	728	Y5BR	Averaging Plan	0.45	0.41	0.46	0.43	0.65	-37%
GA	Yates	Georgia Power Co	728	Y6BR	Averaging Plan	0.45	0.33	0.46	0.43	0.67	-51%
GA	Yates	Georgia Power Co	728	Y7BR	Averaging Plan	0.45	0.31	0.46	0.43	0.61	-49%
IA	Burlington	IES Utilities, Inc.	1104	1	Averaging Plan	0.45	0.32	0.47	0.31	0.63	-49%
IA	Milton L Kapp	Interstate Power Co	1048	2	Standard Limitation	0.45	0.34			0.80	-58%
IA	Prairie Creek	IES Utilities, Inc.	1073	4	Averaging Plan	0.50	0.29	0.47	0.31	1.05	-72%
IA	Riverside	Midamerican Energy Co	1081	9	Standard Limitation	0.45	0.37			0.82	-55%
IL	Baldwin	Illinois Power Co	889	3	Averaging Plan	0.45	0.36	0.45	0.40	0.67	-46%
IL	Grand Tower	CIPSCO	862	7	Averaging Plan	0.50	0.73	0.45	0.42	0.78	-6%
IL	Grand Tower	CIPSCO	862	8	Averaging Plan	0.50	0.77	0.45	0.42	0.96	-20%
IL	Grand Tower	CIPSCO	862	9	Averaging Plan	0.50	0.56	0.45	0.42	0.64	-13%
IL	Hennepin	Illinois Power Co	892	2	Averaging Plan	0.45	0.52	0.45	0.40	0.59	-12%

Appendix C-3: Compliance Requirements and Results for the 239 NO_x Affected Units in 1996

ST	Plant Name	Operating Utility	ORIS Code	Boiler	Compliance Approach	1996 Emis-sion Limit	1996 Emis-sion Rate	1996 Avg Plan Limit	1996 Avg Plan Rate	1990 Emission Rate	% Change from 1990 to 1996
IL	Hutsonville	CIPSCO	863	5	Averaging Plan	0.45	0.54	0.45	0.42	0.70	-23%
IL	Hutsonville	CIPSCO	863	6	Averaging Plan	0.45	0.56	0.45	0.42	0.67	-16%
IL	Joppa Steam	Electric Energy Inc	887	1	Standard Limitation	0.45	0.27			0.56	-52%
IL	Joppa Steam	Electric Energy Inc	887	2	Standard Limitation	0.45	0.27			0.56	-52%
IL	Joppa Steam	Electric Energy Inc	887	3	Standard Limitation	0.45	0.24			0.56	-57%
IL	Joppa Steam	Electric Energy Inc	887	4	Standard Limitation	0.45	0.24			0.56	-57%
IL	Joppa Steam	Electric Energy Inc	887	5	Standard Limitation	0.45	0.25			0.56	-55%
IL	Joppa Steam	Electric Energy Inc	887	6	Standard Limitation	0.45	0.25			0.56	-55%
IL	Meredosia	CIPSCO	864	1	Averaging Plan	0.45	0.49	0.45	0.42	0.50	-2%
IL	Meredosia	CIPSCO	864	2	Averaging Plan	0.45	0.49	0.45	0.42	0.50	-2%
IL	Meredosia	CIPSCO	864	3	Averaging Plan	0.45	0.49	0.45	0.42	0.50	-2%
IL	Meredosia	CIPSCO	864	4	Averaging Plan	0.45	0.49	0.45	0.42	0.50	-2%
IL	Meredosia	CIPSCO	864	5	Averaging Plan	0.45	0.64	0.45	0.42	0.67	-4%
IL	Newton	CIPSCO	6017	1	Averaging Plan	0.45	0.30	0.45	0.42	0.47	-36%
IL	Newton	CIPSCO	6017	2	Averaging Plan	0.45	0.34	0.45	0.42	0.39	-13%
IL	Vermilion	Illinois Power Co	897	1	Averaging Plan	0.45	0.29	0.45	0.40	0.94	-69%
IL	Vermilion	Illinois Power Co	897	2	Averaging Plan	0.45	0.29	0.45	0.40	0.74	-61%
IN	Cayuga	PSI Energy, Inc.	1001	1	Averaging Plan	0.45	0.35	0.48	0.42	0.42	-17%
IN	Cayuga	PSI Energy, Inc.	1001	2	Averaging Plan	0.45	0.36	0.48	0.42	0.47	-23%
IN	Elmer W Stout	Indianapolis Power & Light	990	50	Averaging Plan	0.45	0.37	0.45	0.36	0.63	-41%
IN	Elmer W Stout	Indianapolis Power & Light	990	60	Averaging Plan	0.45	0.38	0.45	0.36	0.65	-42%
IN	Elmer W Stout	Indianapolis Power & Light	990	70	Averaging Plan	0.45	0.33	0.45	0.36	0.71	-54%
IN	F B Culley	Southern Indiana Gas & Elec	1012	2	Standard Limitation	0.50	0.45			1.05	-57%
IN	F B Culley	Southern Indiana Gas & Elec	1012	3	Standard Limitation	0.50	0.45			1.23	-63%
IN	Frank E Ratts	Hoosier Energy	1043	1SG1	Averaging Plan	0.50	0.49	0.50	0.47	1.08	-55%
IN	Frank E Ratts	Hoosier Energy	1043	2SG1	Averaging Plan	0.50	0.46	0.50	0.47	1.09	-58%
IN	Gibson	PSI Energy, Inc.	6113	1	Averaging Plan	0.50	0.51	0.48	0.42	1.03	-50%
IN	Gibson	PSI Energy, Inc.	6113	2	Averaging Plan	0.50	0.51	0.48	0.42	1.12	-54%

Appendix C-3: Compliance Requirements and Results for the 239 NO_x Affected Units in 1996

ST	Plant Name	Operating Utility	ORIS Code	Boiler	Compliance Approach	1996 Emission Limit	1996 Emission Rate	1996 Avg Plan Limit	1996 Avg Plan Rate	1990 Emission Rate	% Change from 1990 to 1996
IN	Gibson	PSI Energy, Inc.	6113	3	Averaging Plan	0.50	0.45	0.48	0.42	0.52	-14%
IN	H T Pritchard	Indianapolis Power & Light	991	3	Averaging Plan	0.45	0.69	0.45	0.36	0.74	-7%
IN	H T Pritchard	Indianapolis Power & Light	991	4	Averaging Plan	0.45	0.69	0.45	0.36	0.74	-7%
IN	H T Pritchard	Indianapolis Power & Light	991	5	Averaging Plan	0.45	0.34	0.45	0.36	0.67	-49%
IN	H T Pritchard	Indianapolis Power & Light	991	6	Averaging Plan	0.45	0.34	0.45	0.36	0.47	-28%
IN	Petersburg	Indianapolis Power & Light	994	1	Averaging Plan	0.45	0.28	0.45	0.36	0.56	-50%
IN	Petersburg	Indianapolis Power & Light	994	2	Averaging Plan	0.45	0.38	0.45	0.36	0.63	-40%
IN	Petersburg	Indianapolis Power & Light	994	3	Averaging Plan	0.45	0.40	0.45	0.36	0.37	8%
IN	Petersburg	Indianapolis Power & Light	994	4	Averaging Plan	0.45	0.34	0.45	0.36	0.37	-8%
IN	R Gallagher	PSI Energy, Inc.	1008	1	Averaging Plan	0.50	0.42	0.48	0.42	0.74	-43%
IN	R Gallagher	PSI Energy, Inc.	1008	2	Averaging Plan	0.50	0.42	0.48	0.42	0.95	-56%
IN	R Gallagher	PSI Energy, Inc.	1008	3	Averaging Plan	0.50	0.37	0.48	0.42	0.95	-61%
IN	R Gallagher	PSI Energy, Inc.	1008	4	Averaging Plan	0.50	0.37	0.48	0.42	0.95	-61%
IN	Wabash River	PSI Energy, Inc.	1010	2	Averaging Plan	0.50	0.54	0.48	0.42	0.95	-69%
IN	Wabash River	PSI Energy, Inc.	1010	3	Averaging Plan	0.50	0.55	0.48	0.42	0.92	-41%
IN	Wabash River	PSI Energy, Inc.	1010	5	Averaging Plan	0.50	0.50	0.48	0.42	0.85	-35%
IN	Wabash River	PSI Energy, Inc.	1010	6	Averaging Plan	0.45	0.39	0.48	0.42	0.37	35%
KS	LA Cygne	Kansas City Power & Light	1241	2	Standard Limitation	0.50	0.31			0.29	7%
KS	Quindaro	Board of Pub. Util., KS City	1295	2	Standard Limitation	0.50	0.31			0.64	-52%
KY	Cooper	East Kentucky Power Coop	1384	1	Averaging Plan	0.50	0.41	0.50	0.41	0.90	-54%
KY	Cooper	East Kentucky Power Coop	1384	2	Averaging Plan	0.50	0.41	0.50	0.41	0.90	-54%
KY	E W Brown	Kentucky Utilities Co	1355	1	Standard Limitation	0.50	0.49			1.00	-51%
KY	East Bend	Cincinnati Gas & Electric Co	6018	2	Averaging Plan	0.50	0.33	0.48	0.42	0.31	6%
KY	Elmer Smith	Owensboro City of	1374	2	Standard Limitation	0.45	0.41			0.86	-52%
KY	Green River	Kentucky Utilities Co	1357	5	Standard Limitation	0.50	0.43			0.84	-49%
KY	H L Spurlock	East Kentucky Power Coop	6041	1	Standard Limitation	0.50	0.43			0.90	-52%
KY	R D Green	Big Rivers Electric	6639	G1	Standard Limitation	0.50	0.37			0.41	-10%
KY	R D Green	Big Rivers Electric	6639	G2	Standard Limitation	0.50	0.46			0.45	2%

Appendix C-3: Compliance Requirements and Results for the 239 NO_x Affected Units in 1996

ST	Plant Name	Operating Utility	ORIS Code	Boiler	Compliance Approach	1996 Emission Limit	1996 Emission Rate	1996 Avg Plan Limit	1996 Avg Plan Rate	1990 Emission Rate	% Change from 1990 to 1996
MD	Chalk Point	PEPCO	1571	2	AEL Demonstration	1.20	1.02			1.35	-24%
MD	R P Smith	Potomac Edison Co	1570	9	Averaging Plan	0.50	0.54	0.49	0.38	0.87	-38%
MD	R P Smith	Potomac Edison Co	1570	11	Averaging Plan	0.45	0.41	0.49	0.38	0.78	-47%
MI	J H Campbell	Consumers Power Co	1710	1	AEL Demonstration	0.55	0.44			0.69	-36%
MN	High Bridge	Northern States Power Co	1912	3	Averaging Plan	0.50	0.58	0.46	0.30	0.48	21%
MN	High Bridge	Northern States Power Co	1912	4	Averaging Plan	0.50	0.58	0.46	0.30	0.48	21%
MN	High Bridge	Northern States Power Co	1912	5	Averaging Plan	0.50	0.58	0.46	0.30	0.48	21%
MN	High Bridge	Northern States Power Co	1912	6	Averaging Plan	0.50	0.58	0.46	0.30	0.48	21%
MN	Sherburne County	Northern States Power Co	6090	1	Averaging Plan	0.45	0.25	0.46	0.30	0.45	-44%
MN	Sherburne County	Northern States Power Co	6090	2	Averaging Plan	0.45	0.25	0.46	0.30	0.45	-44%
MO	Hawthorn	Kansas City Power & Light	2079	5	Standard Limitation	0.45	0.38			0.36	6%
MO	Iatan	Kansas City Power & Light	6065	1	Standard Limitation	0.50	0.29			0.31	-6%
MO	James River	Springfield City of (MO)	2161	3	Averaging Plan	0.50	0.56	0.50	0.48	1.02	-45%
MO	James River	Springfield City of (MO)	2161	4	Averaging Plan	0.50	0.64	0.50	0.48	0.87	-26%
MO	James River	Springfield City of (MO)	2161	5	Averaging Plan	0.50	0.56	0.50	0.48	0.93	-40%
MO	Labadie	Union Electric Co	2103	1	Averaging Plan	0.45	0.18	0.45	0.25	0.62	-71%
MO	Labadie	Union Electric Co	2103	2	Averaging Plan	0.45	0.22	0.45	0.25	0.62	-65%
MO	Labadie	Union Electric Co	2103	3	Averaging Plan	0.45	0.24	0.45	0.25	0.62	-61%
MO	Labadie	Union Electric Co	2103	4	Averaging Plan	0.45	0.22	0.45	0.25	0.62	-65%
MO	Meramec	Union Electric Co	2104	1	Averaging Plan	0.45	0.71	0.45	0.25	0.82	-13%
MO	Meramec	Union Electric Co	2104	2	Averaging Plan	0.45	0.65	0.45	0.25	0.63	3%
MO	Meramec	Union Electric Co	2104	3	Averaging Plan	0.50	0.83	0.45	0.25	0.96	-14%
MO	Meramec	Union Electric Co	2104	4	Averaging Plan	0.50	0.37	0.45	0.25	1.17	-68%
MO	Montrose	Kansas City Power & Light	2080	1	Standard Limitation	0.45	0.36			0.32	13%
MO	Montrose	Kansas City Power & Light	2080	2	Standard Limitation	0.45	0.39			0.34	15%
MO	Montrose	Kansas City Power & Light	2080	3	Standard Limitation	0.45	0.39			0.34	15%
MO	Rush Island	Union Electric Co	6155	1	Averaging Plan	0.45	0.22	0.45	0.25	0.63	-65%
MO	Rush Island	Union Electric Co	6155	2	Averaging Plan	0.45	0.20	0.45	0.25	0.63	-68%

Appendix C-3: Compliance Requirements and Results for the 239 NO_x Affected Units in 1996

ST	Plant Name	Operating Utility	ORIS Code	Boiler	Compliance Approach	1996 Emis-sion Limit	1996 Emis-sion Rate	1996 Avg Plan Limit	1996 Avg Plan Rate	1990 Emission Rate	% Change from 1990 to 1996
MO	Southwest	Springfield City of (MO)	6195	1	Averaging Plan	0.50	0.35	0.50	0.48	0.47	-26%
MO	Thomas Hill	Associated Electric Coop Inc	2168	MB3	Standard Limitation	0.50	0.30			0.31	-3%
MS	Jack Watson	Mississippi Power Co	2049	4	Averaging Plan	0.50	0.44	0.47	0.41	1.10	-60%
MS	Jack Watson	Mississippi Power Co	2049	5	Averaging Plan	0.50	0.53	0.47	0.41	1.22	-57%
MS	R D Morrow	South Mississippi El Pwr	6061	1	Averaging Plan	0.50	0.43	0.50	0.47	0.42	2%
MS	R D Morrow	South Mississippi El Pwr	6061	2	Averaging Plan	0.50	0.51	0.50	0.47	0.43	19%
MS	Victor J Daniel Jr	Mississippi Power Co	6073	1	Averaging Plan	0.45	0.30	0.47	0.41	0.27	11%
MS	Victor J Daniel Jr	Mississippi Power Co	6073	2	Averaging Plan	0.45	0.32	0.47	0.41	0.28	14%
NY	Dunkirk	Niagara Mohawk Power Corp	2554	3	Standard Limitation	0.45	0.33			0.48	-31%
NY	Dunkirk	Niagara Mohawk Power Corp	2554	4	Standard Limitation	0.45	0.33			0.48	-31%
NY	Greenidge	NYSEG	2527	6	Averaging Plan	0.45	0.54	0.45	0.41	0.55	-2%
NY	Milliken	NYSEG	2535	1	Averaging Plan	0.45	0.38	0.45	0.41	0.66	-42%
NY	Milliken	NYSEG	2535	2	Averaging Plan	0.45	0.38	0.45	0.41	0.59	-36%
OH	Ashtabula	Cleveland Electric Illum Co	2835	7	Standard Limitation	0.45	0.40			0.61	-34%
OH	Conesville	Columbus Southern Power	2840	3	Standard Limitation	0.50	0.45			0.93	-52%
OH	Conesville	Columbus Southern Power	2840	4	Standard Limitation	0.45	0.41			0.55	-25%
OH	Eastlake	Cleveland Electric Illum Co	2837	1	Standard Limitation	0.45	0.39			0.49	-20%
OH	Eastlake	Cleveland Electric Illum Co	2837	2	Standard Limitation	0.45	0.37			0.68	-46%
OH	Eastlake	Cleveland Electric Illum Co	2837	3	Standard Limitation	0.45	0.38			0.54	-30%
OH	Eastlake	Cleveland Electric Illum Co	2837	4	Standard Limitation	0.45	0.37			0.51	-27%
OH	Edgewater	Ohio Edison Co	2857	13	Averaging Plan	0.50	0.17	0.50	0.42	0.87	-80%
OH	Gorge	Ohio Edison Co	2858	25	Averaging Plan	0.50	Not Op.				
OH	Gorge	Ohio Edison Co	2858	26	Averaging Plan	0.50	Not Op.				
OH	Miami Fort PSI	Cincinnati Gas & Electric Co	2832	6	Averaging Plan	0.45	0.63	0.48	0.42	0.73	-14%
OH	Picway	Columbus Southern Power	2843	9	Standard Limitation	0.50	0.41			0.87	-53%
OH	Toronto	Ohio Edison Co	2867	10	Averaging Plan	0.50	Not Op.				
OH	Toronto	Ohio Edison Co	2867	11	Averaging Plan	0.50	Not Op.				
OH	W H Sammis	Ohio Edison Co	2866	5	Averaging Plan	0.50	0.43	0.50	0.42	0.52	-17%

Appendix C-3: Compliance Requirements and Results for the 239 NO_x Affected Units in 1996

ST	Plant Name	Operating Utility	ORIS Code	Boiler	Compliance Approach	1996 Emis-sion Limit	1996 Emis-sion Rate	1996 Avg Plan Limit	1996 Avg Plan Rate	1990 Emission Rate	% Change from 1990 to 1996
OH	W H Sammis	Ohio Edison Co	2866	6	Averaging Plan	0.50	0.42	0.50	0.42	1.10	-62%
OH	Walter C Beckjord	Cincinnati Gas & Electric Co	2830	5	Averaging Plan	0.45	0.39	0.48	0.42	0.72	-46%
OH	Walter C Beckjord	Cincinnati Gas & Electric Co	2830	6	Averaging Plan	0.45	0.37	0.48	0.42	0.71	-48%
PA	Armstrong	West Penn Power Co	3178	2	Averaging Plan	0.50	0.39	0.49	0.38	1.04	-63%
PA	Bruce Mansfield	Ohio Edison Co	6094	1	Averaging Plan	0.50	0.40	0.50	0.42	0.98	-59%
PA	Bruce Mansfield	Ohio Edison Co	6094	2	Averaging Plan	0.50	0.43	0.50	0.42	1.13	-62%
PA	Brunner Island	PP&L	3140	1	Averaging Plan	0.45	0.37	0.47	0.41	0.65	-43%
PA	Brunner Island	PP&L	3140	2	Averaging Plan	0.45	0.37	0.47	0.41	0.71	-48%
PA	Brunner Island	PP&L	3140	3	Averaging Plan	0.45	0.42	0.47	0.41	0.83	-49%
PA	Cheswick	Duquesne Light Co	8226	1	Standard Limitation	0.45	0.38			0.71	-46%
PA	Martins Creek	PP&L	3148	1	Averaging Plan	0.50	0.49	0.47	0.41	1.03	-52%
PA	Martins Creek	PP&L	3148	2	Averaging Plan	0.50	0.49	0.47	0.41	0.93	-47%
PA	Mitchell	West Penn Power Co	3181	33	Averaging Plan	0.45	0.41	0.49	0.38	0.68	-40%
PA	New Castle	Ohio Edison Co	3138	1	Averaging Plan	0.50	Not Op.				
PA	New Castle	Ohio Edison Co	3138	2	Averaging Plan	0.50	Not Op.				
PA	Portland	GPU	3113	1	Averaging Plan	0.45	0.31	0.45	0.40	0.46	-33%
PA	Portland	GPU	3113	2	Averaging Plan	0.45	0.48	0.45	0.40	0.66	-27%
PA	Shawville	GPU	3131	1	Standard Limitation	0.50	0.48			0.99	-52%
PA	Shawville	GPU	3131	2	Standard Limitation	0.50	0.48			1.02	-53%
PA	Shawville	GPU	3131	3	Standard Limitation	0.45	0.43			0.83	-48%
PA	Shawville	GPU	3131	4	Standard Limitation	0.45	0.43			0.82	-48%
PA	Sunbury	PP&L	3152	3	Averaging Plan	0.50	0.43	0.47	0.41	0.93	-54%
PA	Sunbury	PP&L	3152	4	Averaging Plan	0.50	0.43	0.47	0.41	1.29	-67%
TN	Gallatin	TVA	3403	1	Averaging Plan	0.45	0.39	0.48	0.44	0.59	-34%
TN	Gallatin	TVA	3403	2	Averaging Plan	0.45	0.39	0.48	0.44	0.63	-38%
TN	Gallatin	TVA	3403	3	Averaging Plan	0.45	0.40	0.48	0.44	0.59	-32%
TN	Gallatin	TVA	3403	4	Averaging Plan	0.45	0.40	0.48	0.44	0.55	-27%
TN	Johnsonville	TVA	3406	1	Averaging Plan	0.45	0.47	0.48	0.44	0.45	4%

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ST	Plant Name	Operating Utility	ORIS Code	Boiler	Compliance Approach	1996 Emis-sion Limit	1996 Emis-sion Rate	1996 Avg Plan Limit	1996 Avg Plan Rate	1990 Emission Rate	% Change from 1990 to 1996
TN	Johnsonville	TVA	3406	2	Averaging Plan	0.45	0.47	0.48	0.44	0.48	-2%
TN	Johnsonville	TVA	3406	3	Averaging Plan	0.45	0.47	0.48	0.44	0.46	2%
TN	Johnsonville	TVA	3406	4	Averaging Plan	0.45	0.47	0.48	0.44	0.54	-13%
TN	Johnsonville	TVA	3406	5	Averaging Plan	0.45	0.47	0.48	0.44	0.45	4%
TN	Johnsonville	TVA	3406	6	Averaging Plan	0.45	0.47	0.48	0.44	0.50	-6%
TN	Johnsonville	TVA	3406	7	Averaging Plan	0.50	0.47	0.48	0.44	1.00	-53%
TN	Johnsonville	TVA	3406	8	Averaging Plan	0.50	0.47	0.48	0.44	0.97	-52%
TN	Johnsonville	TVA	3406	9	Averaging Plan	0.50	0.47	0.48	0.44	1.10	-57%
TN	Johnsonville	TVA	3406	10	Averaging Plan	0.50	0.47	0.48	0.44	1.07	-56%
UT	Gadsby	Pacificorp	3648	3	Standard Limitation	0.45	0.08			0.53	-85%
WI	Alma	Dairyland Power Coop	4140	B4	Averaging Plan	0.50	0.76	0.48	0.39	0.85	-9%
WI	Alma	Dairyland Power Coop	4140	B5	Averaging Plan	0.50	0.76	0.48	0.39	0.85	-9%
WI	Genoa	Dairyland Power Coop	4143	1	Averaging Plan	0.45	0.36	0.48	0.39	0.75	-52%
WI	J P Madgett	Dairyland Power Coop	4271	B1	Averaging Plan	0.50	0.30	0.48	0.39	0.30	0%
WI	Port Washington	Wisconsin Electric Power Co	4040	1	Averaging Plan	0.50	0.34	0.48	0.35	0.32	6%
WI	Port Washington	Wisconsin Electric Power Co	4040	2	Averaging Plan	0.50	0.34	0.48	0.35	0.32	6%
WI	Port Washington	Wisconsin Electric Power Co	4040	3	Averaging Plan	0.50	0.34	0.48	0.35	0.32	6%
WI	Port Washington	Wisconsin Electric Power Co	4040	4	Averaging Plan	0.50	0.29	0.48	0.35	0.37	-22%
WI	Port Washington	Wisconsin Electric Power Co	4040	5	Standard Limitation	0.50	Not Op.				
WI	Pulliam	Wisconsin Public Service	4072	7	Averaging Plan	0.50	0.24	0.47	0.37	0.69	-65%
WI	Pulliam	Wisconsin Public Service	4072	8	Averaging Plan	0.50	0.42	0.47	0.37	0.57	-26%
WI	South Oak Creek	Wisconsin Electric Power Co	4041	5	Averaging Plan	0.50	0.23	0.48	0.35	0.28	-18%
WI	South Oak Creek	Wisconsin Electric Power Co	4041	6	Averaging Plan	0.50	0.23	0.48	0.35	0.28	-18%
WI	South Oak Creek	Wisconsin Electric Power Co	4041	7	Averaging Plan	0.45	0.38	0.48	0.35	0.66	-42%
WI	South Oak Creek	Wisconsin Electric Power Co	4041	8	Averaging Plan	0.45	0.38	0.48	0.35	0.67	-43%
WI	Valley	Wisconsin Electric Power Co	4042	1	Averaging Plan	0.50	0.46	0.48	0.35	1.10	-58%
WI	Valley	Wisconsin Electric Power Co	4042	2	Averaging Plan	0.50	0.46	0.48	0.35	1.10	-58%
WI	Valley	Wisconsin Electric Power Co	4042	3	Averaging Plan	0.50	0.47	0.48	0.35	1.05	-55%

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ST	Plant Name	Operating Utility	ORIS Code	Boiler	Compliance Approach	1996 Emission Limit	1996 Emission Rate	1996 Avg Plan Limit	1996 Avg Plan Rate	1990 Emission Rate	% Change from 1990 to 1996
WI	Valley	Wisconsin Electric Power Co	4042	4	Averaging Plan	0.50	0.47	0.48	0.35	0.93	-49%
WI	Weston	Wisconsin Public Service	4078	1	Averaging Plan	0.50	0.76	0.47	0.37	0.90	-16%
WI	Weston	Wisconsin Public Service	4078	2	Averaging Plan	0.50	0.85	0.47	0.37	1.08	-21%
WI	Weston	Wisconsin Public Service	4078	3	Averaging Plan	0.45	0.21	0.47	0.37	0.26	-19%
WV	Albright	Monongahela Power	3942	1	Averaging Plan	0.50	0.65	0.49	0.38	1.10	-41%
WV	Albright	Monongahela Power	3942	2	Averaging Plan	0.50	0.68	0.49	0.38	1.10	-38%
WV	Albright	Monongahela Power	3942	3	Averaging Plan	0.45	0.39	0.49	0.38	0.71	-45%
WV	Mitchell	Ohio Power Co	3948	1	AEL Demonstration	0.56	0.52			0.77	-32%
WV	Mitchell	Ohio Power Co	3948	2	AEL Demonstration	0.56	0.52			0.77	-32%
WV	Pleasants	Monongahela Power	6004	1	Averaging Plan	0.50	0.40	0.49	0.38	0.52	-23%
WV	Pleasants	Monongahela Power	6004	2	Averaging Plan	0.50	0.32	0.49	0.38	0.35	-9%
WY	Jim Bridger	Pacificorp	8066	BW71	Standard Limitation	0.45	0.40			0.63	-37%
WY	Jim Bridger	Pacificorp	8066	BW72	Standard Limitation	0.45	0.37			0.51	-27%
WY	Jim Bridger	Pacificorp	8066	BW73	Standard Limitation	0.45	0.38			0.42	-10%
WY	Wyodak	Pacificorp	6101	BW91	Standard Limitation	0.50	0.33			0.37	-11%

Appendix C-4: Description of NO_x Compliance Assessment Methodology

1. **Emission Rate Evaluation for Single Unit Compliance**

(a) **Compliance Determination**

The NO_x emission limit for each unit is compared to the actual annual NO_x emission rate at the unit as follows. If the unit has an alternative emissions limitation (AEL) or an AEL demonstration limit, this limit is used instead of the base emission limit.

(1) For a unit with a specific stack or multiple stacks:

If unit NO_x emission rate ≤ unit NO_x emission limit

Unit compliance status is Pass

else

Unit compliance status is Fail.

(2) For a unit in a single common stack with other units affected for the specific compliance year:

a. Locate the associated Stack ID for the unit in the ARCONFIG file.

b. If stack NO_x emission rate ≤ unit NO_x emission limit

Unit compliance status is Pass

else

Unit compliance status is Fail.

(3) For a unit with a complex stack configuration:

a. Locate all associated Stack IDs in ARCONFIG file.

b. Select highest NO_x emission rate for all stacks.

c. If selected stack NO_x emission rate ≤ NO_x emission limit

Unit compliance status is Pass

else

d. Calculate NO_x pounds for the unit as apportioned to the unit from each stack

Unit/Stack NO_x Pounds = Actual Stack NO_x Emission Rate * Unit Heat Input Apportioned from the Stack

e. Calculate the total NO_x pounds for the unit:

Unit NO_x Pounds Emitted = Sum of Unit/Stack NO_x Pounds Emitted for Each Unit/Stack

f. Calculate the allowable NO_x pounds for the unit:

Unit Allowable NO_x Pounds = Unit NO_x Emission Limit * Actual Unit Heat Input

g. Determine compliance on a NO_x pounds basis for the unit:

If Unit NO_x Pounds Emitted ≤ Unit Allowable NO_x Pounds

Unit compliance status is Pass

else

Unit compliance status is Fail.

(b) **Excess Emission Calculation**

If the unit compliance status is fail, excess emissions are computed as follows:

(1) Compute allowable pounds from the unit:

NO_x Pounds Allowable = Unit NO_x Emission Limit * Actual Annual Unit Heat Input

(2) Compute pounds emitted from the unit:

a. For a unit associated with a specific stack, multiple stacks, or in a single common stack with other units affected for the specific compliance year:

Unit NO_x Pounds Emitted = Actual NO_x Emission Rate * Actual Annual Unit Heat Input

b. For a unit in a complex stack configuration:

Unit NO_x Pounds Emitted = Sum of (Unit Apportioned Heat Input from Each Stack * Actual NO_x Emission Rate for Each Stack)

(3) Determine exceedance (tons, rounded to one decimal place):

$$NO_x \text{ Tons Exceedance} = (NO_x \text{ Pounds Emitted} - NO_x \text{ Pounds Allowable}) / 2000$$

2. Determining Compliance of Units in Averaging Plans

(a) Compliance Determination

For each averaging plan, a NO_x emissions limit is calculated as follows:

(1) Calculate the allowable NO_x pounds for the each unit in the plan:

$$\text{Unit } NO_x \text{ Pounds Allowable} = \text{Unit } NO_x \text{ Emission Limit} * \text{Actual Annual Unit Heat Input}$$

(2) Calculate the total allowable NO_x pounds for the plan:

$$\text{Total } NO_x \text{ Pounds Allowable for Plan} = \text{Sum of All Units } NO_x \text{ Pounds Allowable}$$

(3) Calculate the total actual heat input for the plan:

$$\text{Total Actual Heat Input for Plan} = \text{Sum of Annual Heat Input for All Units}$$

(4) Calculate the allowable NO_x emission rate for the plan:

$$\text{Allowable } NO_x \text{ Emission Rate for Plan} = \text{Total } NO_x \text{ Pounds Allowable for Plan} / \text{Total Heat Input for Plan}$$

(5) Calculate the NO_x pounds for each unit:

$$\text{Unit } NO_x \text{ Pounds Emitted} = \text{Actual } NO_x \text{ Emission Rate} * \text{Annual Unit Heat Input}$$

(6) Calculate the NO_x pounds for the plan:

$$NO_x \text{ Pounds Emitted for the Plan} = \text{Sum of the Unit } NO_x \text{ Pounds Emitted}$$

(7) Calculate the total actual heat input for the plan:

$$\text{Total Heat Input for the Plan} = \text{Sum of the Annual Heat Input for Each Unit}$$

Appendix C-4: Description of NO_x Compliance Assessment Methodology

(8) Calculate the Annual NO_x emission rate for the plan:

Annual NO_x Emission Rate for the Plan = NO_x Pounds Emitted / Annual Heat Input for the Plan

(9) Determine NO_x compliance for the plan:

If Annual NO_x Emission Rate for the Plan ≤ Allowable NO_x Emission Rate for the Plan

plan compliance status is Pass

else

plan compliance status is Fail.

(b) **Excess Emissions Calculation**

If the plan compliance status is fail, excess emissions are computed in tons to one decimal place as follows:

NO_x Tons Exceedance = (Total NO_x Pounds Emitted for the plan Total NO_x Pounds Allowable for the plan) / 2000

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