Oxides of Nitrogen Budget Trading Program Requirements Summary

Prepared for:
The University of Michigan
Ann Arbor, Michigan

Central Power Plant
1120 East Huron Street
Ann Arbor, Michigan

13-04363.00
December 14, 2004

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EXECUTIVE SUMMARY

The University of Michigan Central Power Plant (CPP) operates eight natural gas and/or fuel oil-fired boilers, as well as two gas turbines, that have the potential to emit air contaminants to the ambient air. Three of the boilers (Boiler Nos. 3, 4, and 6) are affected by the federal oxides of nitrogen (NOx) Budget Trading Program codified at Title 40, Part 96 of the Code of Federal Regulations (40 CFR 96)\(^1\). This program requires that each boiler or other unit affected by the program be allocated a portion of the total NOx emissions allowed for the affected region of the United States in terms of tons of NOx emitted per ozone control period\(^2\). Affected sources are notified of the allocation for each affected unit and the affected source is required to continuously monitor NOx emissions during the ozone control period and report those emissions to U.S. EPA.

For any affected unit whose actual ozone control period NOx emissions were greater than the allocation for that period, the source must purchase NOx allowances on the open market. If an affected unit’s ozone control period NOx emissions were less than the corresponding allocation, those allowances are considered “banked” and can be sold to another source.

Based on preliminary projections of CPP operations and corresponding NOx emission rates, it appears that each of CPP’s affected units will have NOx allowances that will be banked at the end of every ozone control period\(^3\). In addition, because the allocations for each affected unit do not depend on the unit’s actual NOx emissions, if additional NOx emissions control equipment were installed, the rate at which banked allowances were generated would increase significantly. These banked allowances could be sold on the open market (to another affected source to be used or to an environmental organization for the purpose of retiring the allowances) or could just be allowed to accumulate in the CPP account without ever being used. If sold, the income could be used to fund a variety of environmentally beneficial projects or be used to offset some of the operating cost of CPP.

It is important to note that, currently, CPP does not have any banked allowances and that it would be imprudent to divest CPP of banked allowances after only one or two ozone control periods (i.e., it will be important to keep at least some banked allowances at all times in case reported emissions are greater than anticipated or the allowance allocations are less than anticipated). Consequently, it is not critical that a policy be defined until at least two or three

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\(^1\) The Air Quality Division of Michigan’s Department of Environmental Quality promulgated Part 8 of the Michigan Air Pollution Control Rules for the purpose of incorporating by reference, with some small modifications, the requirements of 40 CFR 96.

\(^2\) The ozone control period is defined as May 31, 2004 through September 30, 2004 and the period of May 1 through September 30 each subsequent year.

\(^3\) Although these projections are based on assumptions that have a significant amount of uncertainty.
ozone control periods have passed. In addition, the first several ozone control periods will provide significant insight into numerous details of the program (as well as CPP’s operations).
TABLE OF CONTENTS

1.0 INTRODUCTION .................................................................................................................. 1

2.0 PROCESS DESCRIPTION .................................................................................................... 3
   2.1 FUEL NOx ......................................................................................................................... 3
   2.2 THERMAL NOx .................................................................................................................. 3
   2.3 PROMPT NOx ..................................................................................................................... 4

3.0 NOx BUDGET TRADING PROGRAM REQUIREMENTS SUMMARY .......... 5
   3.1 NOx BUDGET PERMIT ...................................................................................................... 5
   3.2 ALLOWANCE ALLOCATION PROCEDURES ................................................................. 5
   3.3 AUTHORIZED ACCOUNT REPRESENTATIVE ............................................................... 6
   3.4 ALLOWANCE ACCOUNTS ................................................................. 6
      3.4.1 Compliance Account ................................................................................................. 7
      3.4.2 Overdraft Account .................................................................................................... 7
      3.4.3 General Account ....................................................................................................... 7
      3.4.4 Allowance Transfers ................................................................................................. 7
      3.4.5 Banking Allowances ................................................................................................. 8
      3.4.6 Flow Control ............................................................................................................ 8
   3.5 ANNUAL COMPLIANCE CERTIFICATION ................................................................. 8

4.0 NOx ALLOWANCE AND ACTUAL EMISSION PROJECTIONS .................. 10

APPENDICES

Appendix A Allowance and Actual Emission Projections – Current Operating Conditions
Appendix B Allowance and Actual Emission Projections – Low-NOx Burners
Appendix C NOx Allowance Monetary Value Projections
1.0 Introduction

The University of Michigan (U of M) Central Power Plant (CPP), located at 1120 East Huron Street in Ann Arbor, Michigan (SRN: M0675), generates steam and electricity for use by various U of M buildings and facilities located in Ann Arbor. The steam and electricity are generated by a series of eight boilers and two gas turbines, each fired by natural gas and/or fuel oil\(^4\), as well as associated steam turbines, electrical generators, and ancillary equipment.

Operation of each of the aforementioned fuel-fired equipment results in the emission of oxides of nitrogen (NO\(_x\)) to the ambient air. These NO\(_x\) emissions, in the presence of sunlight, react with volatile organic compounds (VOC) to form ground-level ozone. The United States Environmental Protection Agency (U.S. EPA) has established National Ambient Air Quality Standards (NAAQS) for ground level ozone. Using these NAAQS, various regions of the United States are designated as being either in or out of attainment of the NAAQS for ozone.

In recent years, U.S. EPA has determined that NO\(_x\) and ozone in the ambient air can be transported great distances (i.e., from one state to another). Section 126 of the federal clean air act authorizes a downwind State to petition U.S. EPA for a finding that stationary source(s) in upwind States must reduce emissions because they contribute significantly to NAAQS nonattainment in the petitioning State\(^5\).

In response to petitions filed by eight northeastern states seeking ozone related reductions from certain sources in upwind States, U.S. EPA published the document entitled “Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport” (Federal Register, Vol.65, No.11). This document concludes that large fossil fuel-fired emission units in certain upwind States should be required to reduce their ozone control period NO\(_x\) emissions to mitigate the effect these sources have on ozone non-attainment in downwind States. The Ozone Transport Commission (OTC), in collaboration with U.S. EPA, as well as representatives from industry, utilities, and environmental groups developed a “cap-and-trade” program as the control remedy. The cap-and-trade program is a market system that employs a fixed tonnage limitation for a group of sources. The NO\(_x\) Budget Trading Program sets emissions limits for the affected sources in the form of NO\(_x\) “allowances.” One allowance authorizes the emission of one ton of NO\(_x\) emissions. U.S. EPA will allocate, through the State regulatory agency, each source a specific number of allowances per year. Allowances may be bought, sold or traded between the affected sources and other private parties. Should a source receive allowances in excess of those needed, those allowances can also be “banked” for future use.

In response to the Section 126 petition, U.S. EPA promulgated requirements related to the NO\(_x\) cap and trade program. The requirements promulgated at Title 40, Part 96 of the Code of Federal Regulations (40 CFR 96) provide guidelines for state regulatory agencies to incorporate the NO\(_x\) Budget Trading Program requirements into the State Implementation Plan (SIP). The

\(^4\) Boiler Nos. 7 and 8 are fired by natural gas only.

\(^5\) Much of the text included in Section 1.0 of this report is from the U.S. EPA document entitled “Small Entity Compliance Guide, Federal NO\(_x\) Budget Trading Program” (EPA 430-R-00-008, August 2000)
requirements promulgated at 40 CFR 97 include federal program provisions for states that do not modify their SIP.

The Air Quality Division (AQD) of Michigan’s Department of Environmental Quality has submitted proposed revisions to the Michigan SIP to address the NOx Budget Trading Program requirements. The rules for implementing the NOx Budget Trading Program have been promulgated as Part 8 of Michigan’s Administrative Rules for Air Pollution Control. Pursuant to these rules, the emission units affected by the NOx Budget Trading Program at CPP include each boiler that has a maximum rated heat input capacity greater than 250,000,000 Btu/hr and having the potential to emit greater than 25 tons of NOx per ozone control period. Consequently, the CPP units that are affected are Boiler Nos. 3, 4, and 6.

Preliminary projections of future NOx allowance allocations for CPP Boiler Nos. 3, 4, and 6 as well as corresponding projections of actual NOx emissions from these three boilers indicate that the NOx allocations for these boilers will consistently exceed NOx emissions. Consequently, it is anticipated that CPP will have excess allowances that could be banked, traded, or retired in the future. The intent of this document is to summarize the budget trading requirements of the NOx budget trading program as they apply to Boiler Nos. 3, 4, and 6.

Section 2.0 of this document provides a description of the affected boilers as well as the mechanisms for the formation and emission of NOx. Section 3.0 summarizes the requirements of Michigan’s NOx Budget Trading Program and Section 4.0 summarizes current projections of future NOx allowance allocations and corresponding actual NOx emission rates.

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6 The proposed Michigan SIP revisions have not yet been approved by U.S. EPA and, consequently, the provisions of 40 CFR 97 currently apply. However, it is anticipated that the proposed Michigan SIP revisions will be approved by U.S. EPA with only minor changes, if any. Consequently, for the purposes of this report, it is assumed that the requirements for emission units in Michigan will be identical to those submitted by Michigan to U.S. EPA.
2.0 Process Description

CPP Boiler Nos. 3, 4, and 6 generate steam and electricity for use by various U of M campus buildings in essentially the same manner. Natural gas or distillate fuel oil is supplied to the firebox section of the boiler and combusted. The hot exhaust gases then travel through the water tubes banks in the heat exchanger section of the boiler where the heat of the exhaust gases is absorbed by water (without actually contacting the water) to create high-pressure steam. The exhaust gases then exit the boiler and are exhausted to the ambient air via one of two masonry exhaust stacks. A portion of the steam generated by the boilers is routed to one of three steam turbines connected to an associated electrical generator. The steam drives the steam turbine which, in turn, drives the electrical generator. The remainder of the steam is routed to U of M's underground steam delivery system and finally to various campus buildings to provide thermal energy to heat the buildings during winter and air conditioning in the summer.

During combustion of the natural gas or fuel oil in the firebox section of the boiler, NOx is formed and exhausted to the masonry exhaust stacks as a portion of the boiler exhaust gas. This NOx is formed by one of three fundamentally different mechanisms:

1. Fuel NOx,
2. Thermal NOx, and
3. Prompt NOx

Sections 2.1 through 2.3 describe each of these three mechanisms.

2.1 Fuel NOx

Fuel NOx is that NOx formed by the oxidation of the nitrogen portion of nitrogen-bearing organic compounds in the fuel fired. This mechanism converts a significant portion of nitrogen in the fuel to NOx. Because solid fuels (e.g., coal, tire derived fuel) typically contain a significant concentration of nitrogen-bearing organic compounds, this mechanism predominates for boilers fired by solid fuels. Because liquid fuels (e.g., fuel oil, waste oil) typically contain a much lower concentration of nitrogen-bearing organic compounds than solid fuels, the NOx formed by this mechanism is far less than that of solid fuels. Because gaseous fuels (especially natural gas) contain an insignificant concentration of nitrogen bearing organic compounds, fuel NOx due to the combustion of natural gas is negligible.

2.2 Thermal NOx

The concentration of nitrogen in the ambient air is approximately 79.0 percent by volume and the concentration of oxygen in the ambient air is approximately 20.9 percent by volume. At extreme temperatures (i.e., >1,800°F) such as that which occurs in the flame zone of a boiler, a small portion of the nitrogen in the combustion air entering the flame zone is converted to NOx. Because natural gas typically burns at a higher temperature than fuel oil and fuel oil typically burns at a higher temperature than coal, thermal NOx formation is greater for natural gas than for fuel oil and is greater for fuel oil than for coal.
2.3 Prompt NOx

Prompt NOx occurs through early reactions of nitrogen molecules in the combustion air and hydrocarbon radicals from the fuel. Prompt NOx reactions occur within the flame and are usually negligible when compared to the amount of NOx formed through the thermal NOx mechanism.

As required by Michigan Rule 813, NOx emissions from each boiler (i.e., 3, 4, and 6) must be continuously monitored (in terms of tons per ozone control period) using continuous emission monitoring systems. These monitoring systems have recently been installed by CPP and are currently operating.
3.0 NOx Budget Trading Program Requirements Summary

Pursuant to Michigan Rule 810, for each emission unit subject to the NOx Budget Trading Program, the authorized account representative (see Section 3.3) is required to submit (to AQD) the total heat input (in terms of Btu) for each affected unit during each ozone control period. This heat input data is then used by AQD to allocate NOx allowances (in terms of tons of NOx per ozone control period) to each affected unit. If actual NOx emissions from the affected unit are less than the allowance allocated to that unit, the excess NOx allowances can be (1) traded to another unit at the same stationary source (i.e., the same facility), (2) traded to another organization (i.e., sold), (3) “banked” for use in the following ozone control period, or (4) retired.

NOx Budget Trading Program requirements relevant to the intent of this document can be separated into five categories as follows:

1. NOx budget permit requirements,
2. Allowance allocation procedures,
3. Authorized account representative designation,
4. Allowance account procedures, and
5. Annual compliance certification requirements.

Sections 3.1 through 3.5 summarize the requirements of NOx Budget Trading Program with respect to the aforementioned categories.

3.1 NOx Budget Permit

Michigan Rule 808 (adopting 40 CFR 96.20 through 96.25) requires that affected stationary sources must apply for a NOx Budget Permit if it is independently required to have a Renewable Operating Permit or a Federally-Enforceable State Operating Permit (FESOP). Since U of M is required to have a Renewable Operating Permit, CPP has applied for a NOx Budget Permit for its three NOx Budget units.

3.2 Allowance Allocation Procedures

Michigan Rule 810 summarizes AQD’s procedure for allocating NOx allowances to the various electrical generating units (EGU) and non-EGU’s located in Michigan and affected by the NOx Budget Trading Program. Because the affected emission units at CPP do not meet the definition of EGU’s, each is designated as a non-EGU.

In general, AQD has allocated 1,081 tons of ozone control period NOx emissions to all affected non-EGU’s, collectively. This statewide 1,081 tons is then allocated to the various affected non-EGU’s by:

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7 The ozone control period is defined as May 31, 2004 through September 30, 2004 and the period of May 1 through September 30 each subsequent year.
(1) Multiplying the maximum two-year average total ozone control period heat input for each affected unit in a defined five year period (in million Btu) by 0.17 lbs NOx/million Btu or, if the emission unit is subject to a NOx emission rate limit less than 0.17 lbs NOx/million Btu, the emission limit for the emission unit.

(2) After the aforementioned calculation has been performed for each affected non-EGU in Michigan, the calculated allowance for each unit is totaled and compared to the statewide allocation of 1,081 tons. Each individual emission unit’s allocation is then normalized so that the total for all affected units in Michigan is 1,081 tons. For example, if after calculating the allowance for all affected units the total statewide allocation was 1,000 tons, the calculated allocation for each individual emission unit would be multiplied by 1,081 and divided by 1,000.

This procedure will be performed by AQD every three years. To determine the allocations for the 2004 through 2006 ozone control periods, AQD used the average of the two highest ozone control period heat input rates during 1995 through 2000. To determine the allocations for the 2007 through 2009 ozone control periods, AQD will use the average of the two highest ozone control period heat input rates during 1998 through 2003. This procedure will then be repeated accordingly in the future.

3.3 Authorized Account Representative

Michigan Rule 807 (adoption 40 CFR 96.10 through 96.14) provides that each NOx budget source must have one and only one NOx authorized account representative. Each submission under the NOx Budget Trading Program must be submitted, signed, and certified by the NOx authorized account representative. The authorized account representative must complete an account certificate of representation for each NOx budget source, setting forth the required information for each NOx budget emission unit. Currently, CPP’s authorized account representative is Ms. D. Malama Chock, Environmental Coordinator with U of M’s Department of Occupational Safety & Environmental Health (OSEH).

3.4 Allowance Accounts

For NOx allowances, AQD establishes allowance accounts that are similar in nature to a bank checking account. Michigan Rule 812 (adoption 40 CFR 96.50 through 93.54, 96.56, 96.57, and 96.60 through 96.62) provides that upon receipt of a complete account certificate of representation, the AQD will establish the required allowance accounts. CPP has submitted the required account certificate of representation and, consequently, AQD has established accounts for CPP Boiler Nos. 3, 4, and 6.

Using the allowance account, a stationary source simply needs to have enough allowances to cover the previous ozone control period’s actual NOx emissions on the annual reconciliation date of November 30. Management of the allowance account can be separated into five categories as follows:

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8 CPP Boiler No. 6 is subject to a NOx emission rate limit of 0.10 lbs/MMBtu. CPP Boiler Nos. 3 and 4 are not subject to a NOx emission rate limit. Consequently, the allocations for Boilers 3 and 4 are based on 0.17 lbs/MMBtu and the allocation for Boiler No. 6 is based on 0.10 lbs/MMBtu.
(1) Compliance account,  
(2) Overdraft account,  
(3) General account,  
(4) Account transfers, and  
(5) Banking allowances.

Sections 3.4.1 through 3.4.5 summarize information pursuant to each of these categories. Section 3.4.6 summarizes information regarding “flow control” of banked allowances.

3.4.1 Compliance Account

A compliance account is automatically established for each NOx budget unit (40 CFR 96.51). After a control period, AQD will deduct a number of allowances equal to the unit’s NOx emissions (in tons) in the control period (40 CFR 96.54).

3.4.2 Overdraft Account

An overdraft account is automatically established for a NOx Budget source with more than one NOx Budget unit (40 CFR 96.51). After a control period, AQD will deduct a number of allowances equal to the unit’s NOx emissions (in tons) in the control period that exceed the amount of allowances in the compliance account (40 CFR 96.54).

3.4.3 General Account

Michigan Rule 812 (adopting 40 CFR 96.51(b)) stipulates that any person may apply to open a general account for the purpose of holding and transferring allowances. CPP has not applied to open a general account but can do so at any time in the future.

3.4.4 Allowance Transfers

Transfers of allowances to compliance or overdraft accounts can be made prior to the NOx allowance transfer deadline, November 30 of the current year (Michigan Rule 803, adopting 40 CFR 96.2). Following the close of the transfer period there is a freeze on transfers of current and past year allowances until March 30 of the next year.

Michigan Rule 812 (adopting 40 CFR 96.60 through 96.62) provides the mechanism for submission of NOx allowance transfers. Generally, transfers require identification information on both transferor and transferee, along with the serial numbers from the specific allowances to be transferred. The NOx authorized account representative of the transferor account must sign the transfer. Allowance transfers can occur between any units affected by the NOx Budget Trading Program (i.e., sources in any state or any category).
3.4.5 Banking Allowances

Michigan Rule 815 (adopting 40 CFR 96.55) stipulates that AQD will designate as “banked” any allowances that remain in your compliance, overdraft, and general accounts at the end of the reconciliation period, after the agency has made all deductions for a given control period from these accounts. These banked allowances can then be used in the following ozone control period or subsequent ozone control periods.

3.4.6 Flow Control

To control the amount of allowances banked, Michigan Rule 815 (adopting 40 CFR 96.55), indicates that beginning in 2005 (after the 2004 control period) U.S. EPA will implement “flow control.” For each control period, U.S. EPA will determine whether the total number of banked allowances for the entire ozone control region (i.e., all states affected by NOx Budget Trading Program) exceeds ten percent of the overall NOx Budget for the following control period. If the number exceeds ten percent; U.S. EPA will apply an equal discount ratio to a certain percentage of the banked allowances of all sources. Meaning that a certain percentage of banked allowances will be able to be used at a 1 allowance to 1 ton of NOx emissions, with the remaining balance of banked allowances to be discounted at the rate of 2 allowances per 1 ton of NOx emissions.

For example, if the total NOx allowance allocation for affected units (both EGU and non-EGU) in the ozone control region were 290,000 tons and, at the end of an ozone control period the total banked allowances were 58,000 tons, 50% of the banked allowances for each source would qualify to be used at a 1 to 1 ratio while 50% of the banked allowances for each source would have to be used at a 2 to 1 ratio:

\[
\frac{(290,000) \times (0.1)}{58,000} = 0.5
\]

It should be noted that (1) each NOx allowance allocation is assigned a discrete serial number and (2) flow control does not apply to specific NOx allowances⁹. Prior to the end of the reconciliation period each year, the authorized account representative has the option of submitting a document notifying U.S. EPA of which NOx allowance allocations to use for that ozone control period.

3.5 Annual Compliance Certification

Michigan Rule 809 (adopting 40 CFR 96.30 and 96.31) stipulates that the authorized account representative of the source must submit an annual compliance certification to AQD by November 30. AQD or U.S. EPA may review and conduct independent audits concerning any

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⁹ In the example where an affected source can use 50% of its banked allowances at a 1 to 1 ratio and the remaining 50% at a 2 to 1 ratio, if the source uses less than 50% of its banked allowances in the ozone control period, all allowances will be at a 1 to 1 ratio. The remainder of the allowances (i.e., those not used in the ozone control period) remain in the bank and are not discounted. For the following ozone control period, U.S. EPA will perform the flow control calculation again, and notify sources of the flow control ratio for the upcoming ozone control period.
compliance certification or any other submission under the NOx Budget Trading Program and make appropriate adjustments of the information in the compliance certifications or other submissions.
4.0 NOx Allowance and Actual Emission Projections

CPP has developed projections of future NOx allowances for Boiler Nos. 3, 4, and 6 as well as corresponding actual ozone control period NOx emission rates. These projections have a significant degree of uncertainty due to the following factors:

1. Projections of future NOx allocations are based on projections of future boiler heat input totals (Btu per ozone control period) multiplied by 0.17 lbs/MMBtu for Boiler Nos. 3 and 4 and 0.10 lbs/MMBtu for Boiler No. 6. These projections do not account for the statewide allocation adjustment to normalize to 1,081 tons (see Section 3.2)\textsuperscript{10}. In addition, the heat input totals for each boiler may vary significantly based on future steam and electric demand for CPP.

2. Projections of future actual NOx emissions are based on the aforementioned boiler heat input totals multiplied by average actual NOx emission rates (0.21 lbs/MMBtu for Boiler Nos. 3 and 4 and 0.08 lbs/MMBtu for Boiler No. 6). The heat input totals for each boiler may vary significantly based on future steam and electric demand for CPP. In addition, the average actual emission rates are based on the combustion of natural gas in the boilers. Although the boilers have been fired by natural gas only in recent history, if the cost of natural gas makes it advantageous to fire fuel oil, the actual emission rates would increase slightly.

3. As required by Michigan Rule 813, NOx emissions from Boiler Nos. 3, 4, and 6 are continuously monitored. However, in the event that one or more of the boiler’s continuous emission monitoring systems (CEMS) was “out-of-control” during a time when the boiler was operating, the value recorded by the CEMS would be the maximum potential value rather than the monitored value. If this happens, the recorded ozone control period NOx emissions can become exaggerated in a short time period\textsuperscript{11}.

Projections of future allocations and corresponding actual emissions under current operating scenarios are summarized by Appendix A. Because one of the policy options includes the installation of “low-NOx” burners in Boiler Nos. 3 and 4, Appendix B summarizes projections of future allocations and corresponding actual emissions if low-NOx burners were installed prior to the beginning of the 2006 ozone control period. For each appendix, the monetary value of the excess allowances was projected based on currently available projections of NOx allowance trading (see Appendix C).

\textsuperscript{10} Because the total statewide allocation for non-EGU’s must total 1,081 tons per ozone control period, the allocation for each affected unit is adjusted upward or downward depending on whether the total allocation based on boiler heat input is greater or less than 1,081 tons. For example, if the total non-EGU allocation based on the Michigan Rule 810 allocation procedure before adjustment was 1,000 tons, the allocation for each affected unit would be adjusted by a factor of (1,081/1,000) or 1.081.

\textsuperscript{11} Essentially, the NOx CEMS for each boiler consists of four main components: an oxygen concentration monitor, a NOx concentration monitor, a fuel flowrate monitor, and a data acquisition system. Any or all of these components are considered out-of-control if the corresponding boiler is operating and (1) the component is not operational or (2) the component has failed its respective quality control parameters (i.e., daily calibrations, etc.). In this case, a pre-defined maximum potential value is assigned for the missing data. Some CEMS downtime is almost unavoidable and, if extensive, can consume allocations quickly.
## Appendix A

### Summary of Future Excess Allowance Projections

Current Operating Conditions

<table>
<thead>
<tr>
<th>Ozone Control Period</th>
<th>Projected Allowance Allocation (tons/control period)</th>
<th>Total Projected Allocation (tons/control period)</th>
<th>Total Projected Actual Emissions (tons/control period)</th>
<th>Projected Excess Allowances (tons/control Period)</th>
<th>Projected Monetary Value of Excess Allowances</th>
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<td>2004</td>
<td>Boiler No. 3: 44</td>
<td>Boiler No. 4: 35</td>
<td>Boiler No. 6: 26</td>
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<td>75</td>
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<td>Boiler No. 3: 44</td>
<td>Boiler No. 4: 35</td>
<td>Boiler No. 6: 26</td>
<td>105</td>
<td>75</td>
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<tr>
<td>2006</td>
<td>Boiler No. 3: 44</td>
<td>Boiler No. 4: 35</td>
<td>Boiler No. 6: 26</td>
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<td>75</td>
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<td>Boiler No. 3: 17</td>
<td>Boiler No. 4: 36</td>
<td>Boiler No. 6: 25</td>
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<td>75</td>
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<td>Boiler No. 3: 17</td>
<td>Boiler No. 4: 36</td>
<td>Boiler No. 6: 25</td>
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<td>Boiler No. 6: 15</td>
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## Appendix B

### Summary of Future Excess Allowance Projections

**Low-NOx Burners**

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<thead>
<tr>
<th>Ozone Control Period</th>
<th>Projected Allowance Allocation (tons/period)</th>
<th>Total Projected Allocation (tons/period)</th>
<th>Projected Actual Emissions (tons/period)</th>
<th>Total Projected Actual Emissions (tons/period)</th>
<th>Projected Excess Allowances (tons/period)</th>
<th>Projected Monetary Value of Excess Allowances</th>
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<td>51</td>
<td>15</td>
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Market Notes:

**Late Breaking NOx News:** EPA has just released preliminary emissions data for the 2003 ozone season. Actual emissions were approximately 133,466 tons, against an allocation of approximately 170,000 tons (approximately 145,000 tons 11 approximately 25,000 compliance supplemental pool (CSP) tons). We anticipate approximately 35,600 tons to carryover into 2004. The 2004 allocation is presently planned to be approximately 644,832 tons (approximately 481,832 tons 11 approximately 163,999 CSP tons). With these figures in mind, we anticipate there will be no flow control next year. We also are intrigued by the following additional facts: a) the facilities that will be in the program in 2004 emitted approximately 765,000 tons during the 2003 ozone season; b) with an allocation of 644,832 tons planned for 2004, it would seem as though things could be tight on the supply side next year. BUT: c) for 2004, there will be available the additional approximately 35,600 tons of CSP left over, and d) for mid-west states, the month of May 2004 emissions will not be required to be covered by allowances.

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