



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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CHICAGO, IL 60604-3590

APR 04 2007

REPLY TO THE ATTENTION OF:

(AR-18J)

Nisha Sizemore, Chief
Permits Branch
Office of Air Quality
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Re: Availability of Emission Offset Credits from Noblesville Station

Dear Ms. Sizemore: *Nisha*

We have reviewed the information provided in your March 28, 2005, letter to our office regarding the availability of emission offset credits from the shutdown of an acid rain/nitrogen oxides (NO_x) budget trading program source. This letter describes our determination as to the amount of available offset credits generated by the shutdown. We have based our determination on the information you provided and discussions with your staff, our interpretation of the New Source Review (NSR) emission offset requirements of Section 173 of the Clean Air Act (the Act), permitting regulations at 40 C.F.R. § 51.165(a)(3), the NO_x Budget Trading program (40 C.F.R. Part 96), the Acid Rain Deposition Control program (Section 407 of the Act, 40 C.F.R. Part 76), and the Clean Air Interstate Rule (CAIR). In addition, because of the complexity of the programs involved, we have coordinated this response both internally, as well as with the Office of Air Quality Planning and Standards, the Office of General Counsel and Clean Air Markets Division.

Factual Background

In February 2003, Cinergy Services, Incorporated, permanently retired from service three coal-fired boilers at their PSI Energy, Noblesville Generating Station (Noblesville Station) and replaced them with three combined cycle combustion turbines. Based on the information contained in the netting analysis for the construction permit (Permit# 057-14278-00004), this shutdown resulted in approximately 2,047 tons per year (tpy) of NO_x emissions reductions. The Indiana Department of Environmental Management (IDEM) asked whether these reductions, in whole or in part, are available for use as offset credits.

Through a September 1, 2006, permitting action (NSR Permit No. 145-23127-00001), the State of Indiana transferred to the Noblesville Station approximately 91 tons of the offset credits generated by the boiler shutdowns to the Knauf Insulation plant in Shelbyville, Indiana. The Knauf plant is located in the same 8-hour ozone non-attainment area as the Noblesville Station and the transfer of the NO_x offsets enabled Knauf to meet the requirements of a major modification under NSR for ozone purposes.

Statutory and Regulatory Background

Section 173(a)(1) of the Act requires that, prior to issuing a permit in a non-attainment area, the permit issuing authority must determine that the new source or modification will not interfere with reasonable further progress toward attaining the National Ambient Air Quality Standards (NAAQS). 42 U.S.C. § 7503(1)(1); 40 C.F.R. § 51.165(a)(3)(i).

Section 173(c)(1) of the Act requires new or modified major sources in non-attainment areas to offset increased emissions by obtaining reductions of the same air pollutant in the same non-attainment area, or another non-attainment area if certain requirements are met. 42 U.S.C. § 7503(c)(1). Section 173(c)(2) of the Act provides that “[e]missions reductions otherwise required by this chapter shall not be creditable as emissions reductions for purposes of any such offset requirement.” 40 C.F.R. § 7503(c)(2). This is known as the “surplus” requirement. To be creditable, emissions reductions must also be permanent, quantifiable, and federally enforceable. 40 C.F.R. § 51.165(a)(3)(i)(C).

To determine what emission reductions are surplus and creditable, the NO_x emission limitations required under the Act for each of the three boilers at the Noblesville Station must first be determined. Only emissions reductions beyond the requirements of the Act are eligible as NSR offsets. Specifically, the Nitrogen Oxides Supplement to the General Preamble to 40 C.F.R. Part 52 (57 Fed. Reg. 55620, 55626 (Nov. 25, 1992)) states that only “reductions achieved that exceed the requirements of both the Acid Rain Deposition Control Program, and any applicable Title I requirement are creditable for purposes of offsets.”

Acid Rain Deposition Control Program

To the extent that any of the reductions at Noblesville Station are required under the Acid Rain Deposition Control Program, that portion of the reductions would not be surplus and therefore could not be used for offsets. Title IV of the Act requires that coal-fired boilers meet the NO_x emission limitations set forth in 40 C.F.R. Part 76 through one of three compliance options. Unit operators can choose to: (1) meet an individual standard annual emission limitation based on the boiler type; (2) meet an average of the standard emission limitations of two or more boilers; or (3) for units which cannot meet their standard emission limitations, meet the United States Environmental Protection Agency (U. S. EPA) approved alternate emission limit based on the installation of the NO_x emission unit controls prescribed for that boiler type. The operator of the Noblesville Station chose compliance option (2) above (NO_x averaging) to comply with the requirements of 40 C.F.R. Part 76 (326 IAC 21 in the Indiana rules). The units at Noblesville were therefore required to meet a group average NO_x limit.

Sources choosing to comply with the Acid Rain Deposition Control Program through NO_x averaging are required to submit a NO_x averaging plan that specifies each unit’s standard limit, an alternative contemporaneous emission limitation (ACEL) and an estimated annual heat input. The ACEL represents an estimation of the actual NO_x emission rate at which the boiler will operate during each calendar year the plan is in effect. Neither the ACELs nor the heat inputs are enforceable limits unless the group

NO_x emissions rate¹ exceeds the group NO_x emissions limit for the calendar year in question.

For purposes of calculating creditable NSR offsets, the standard acid rain emission limits for each of the three retired boilers was used. ACELs for these units were not used for calculating available credits because once the three higher emitting Noblesville boilers in the averaging plan were shut down and removed from the plan, the remaining units in the plan were able to readjust their ACELs higher in a new averaging plan, thus potentially allowing more emission into the atmosphere.² We have concluded that only emission reductions below the standard emission limit are surplus and exceed the requirements of the Acid Rain Deposition Control Program.

At the time of shutdown, during compliance year 2003, the three Noblesville Station boilers were part of an averaging plan composed of 35 boilers. The boilers were dry bottom wall-fired coal boilers and were required to meet a standard emission limitation of 0.46 lbs per million British thermal unit (MMBtu). Because actual heat inputs are used to calculate group NO_x emission limits for each Acid Rain compliance year, an average of the actual heat inputs during the time period the units were operating under the Acid Rain Deposition Control Program (2000 through 2002) was used to calculate surplus emission reductions. As shown in the calculations in Enclosure A, a total of 774.9 tons of NO_x offset credits would be available prior to taking any other program into consideration. Of the 774.9 total tons of potential offset credits, 401.4 were emitted during the ozone season and 373.5 during the non-ozone season.

Nitrogen Oxides SIP Call Program

On October 27, 1998, U. S. EPA finalized its NO_x State Implementation Plans (SIP) Call rule requiring 22 States and the District of Columbia to submit SIPs that address the regional transport of ground-level ozone (63 Fed. Reg. 57356). This rule allocated a budget of NO_x allowances to each State covered by the rule and allowed States to choose from a mix of pollution-reduction measures to achieve the required reductions. One of these measures included the ability to adopt a cap-and-trade program. States were provided the option of adopting U. S. EPA's model NO_x Budget Trading Program contained in 40 C.F.R. Part 96. Under the NO_x trading program, each state's budget of

¹ The group NO_x emission rate for each calendar year is calculated by multiplying the actual NO_x emission rate by the actual heat input for each boiler, summing the products for all boilers in the plan and dividing by the sum of the total actual annual heat inputs for all of the boilers in the plan. The group NO_x limit is calculated in a similar fashion, except that instead of multiplying each boiler's actual heat input by its actual NO_x rate, each boiler's actual heat input is multiplied by its standard NO_x limit. If the group NO_x rate is at or below the group NO_x limit, then all of the boilers in the plan are automatically deemed to have met their individual ACELs and heat input limits (even if in actuality some or all of the limits were not met). If the group NO_x rate exceeds the group NO_x limit, then the individual ACELs and heat input limits in the plan become enforceable limits and are used to determine which boilers caused the group to exceed its group NO_x limit. If the group NO_x limit is exceeded, excess emissions monetary penalties are assessed against the owners and operators of the boilers in the averaging plan.

² Note: the use of the standard limit is applicable in this case because the ACELs of the three units were higher than the standard limit.

NO_x allowances is allocated to sources subject to the Program for each ozone season (May 1 through September 30) and sources are allowed to trade allowances as necessary.

The three coal-fired boilers at the Noblesville Station were originally allocated 59, 54, and 52 allowances (tons) per ozone season for the years 2004 through 2006. Every three years, each state's NO_x budget is reallocated to the existing sources subject to the NO_x Budget Trading Program. Because these three boilers were permanently retired from service in 2003, Indiana is allowed to reallocate these emission reductions to other sources in the future.

The U. S. EPA has determined that participation in the NO_x Budget Trading Program also qualifies as meeting Reasonably Available Control Technology (RACT) on a source-category wide basis. "Final Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standards – Phase 2," 70 Fed. Reg. 71612, 71627 (Nov. 29, 2005). If the NO_x SIP Call allowances allocated to the three Noblesville Station boilers are transferred or reallocated to other sources subject to the NO_x SIP Call, those other sources could increase their emissions. Therefore, the emission reductions made by the three Noblesville Station boilers are necessary to assure that the source category continues to meet RACT. As a result, the reductions during the ozone season are required to meet the RACT provisions of the Act and therefore not available for use as offsets. We believe there are special measures that could potentially be taken to ensure that the Noblesville boiler allocations are not reallocated to other sources (i.e., are permanent emission reductions) and therefore available as offsets.

Clean Air Interstate Rule

IDEM's March 2005 letter did not specifically request that we address the impact of CAIR on the availability of NSR emission offset credits. Even so, upon further review, we believe we cannot fully address offset availability without consideration of CAIR.

CAIR, finalized on May 12, 2005 (70 Fed. Reg. 25162), is based on U. S. EPA's finding that SO₂ and NO_x emissions from 28 states and the District of Columbia contribute significantly to non-attainment of the NAAQS for fine particles (PM_{2.5}) and/or 8-hour ozone in downwind States. CAIR requires these states to reduce emissions of SO₂ and/or NO_x to eliminate their significant contribution to downwind states, and establishes SO₂ and NO_x emission budgets for each covered State. Similar to the NO_x SIP call, states may choose between two compliance options to meet these emission reduction requirements: 1) participate in an U. S. EPA-administered interstate cap-and-trade system that caps region-wide emissions in two stages, or 2) meet an individual state emissions budget through measures of the state's choosing. To ensure that the emission reductions required by CAIR are achieved on schedule, U. S. EPA also promulgated a Federal Implementation Plan (71 Fed. Reg. 25328 (April 28, 2006)). CAIR established the annual and ozone season NO_x budgets for Indiana based on the heat input of sources that were operating during the base year of 2001. The three boilers at the Noblesville Station were operating during this time and were therefore included in the calculations used to establish the Indiana NO_x budgets. Although the recently submitted Indiana CAIR SIP does not propose to allocate any allowances to the Noblesville boilers that have shut down, the budgets continue to reflect those sources. In effect, Indiana allocated the

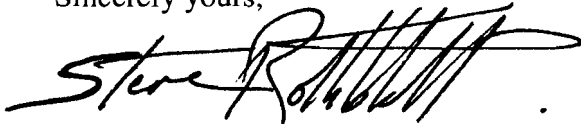
allowances that were included in the Indiana budgets for the Noblesville boilers to other Indiana sources.

The U.S. EPA has determined that participation in the CAIR NO_x trading programs, as with participation in the NO_x Budget Trading program described above, also qualifies as meeting RACT on a source-category wide basis (assuming that the State meets its CAIR requirements solely through controls on electric utility generating units). "Final Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standards – Phase 2," 70 Fed. Reg. 71612, 71627 (Nov. 29, 2005).^{3,4} Since the CAIR allowances allocated to the three Noblesville Station boilers have not been removed from the Indiana CAIR budgets, other Indiana sources are able to increase their emissions to account for the shutdown of the boilers. The emission reductions made by the three Noblesville Station boilers are, therefore, necessary to assure that the source category continues to meet RACT. Because CAIR applies during both the ozone and non-ozone season and these emission reductions are required for the source to meet the RACT provisions of the Act, we have concluded that no offset credits would be available during any time of the year from the shutdown of the Noblesville boilers. We do, however, believe there are special measures that could potentially be taken to ensure the emission reductions from the boiler shutdown are surplus and, therefore, available (such as the retiring of CAIR allowances).

It should be noted that, since the first phase of CAIR will not be implemented until January 1, 2009, emission reductions from the shut-downs that are not required by the NO_x Budget Trading and Acid Rain Deposition Control programs will be available until that time.

If you have any concerns or questions regarding this interpretation please feel free to contact Ethan Chatfield, of my staff, at (312) 886-5112.

Sincerely yours,



Stephen Rothblatt, Director
Air and Radiation Division

Enclosure

³ U.S. EPA proposed to reconsider its decision that meeting CAIR requirements equates to RACT by notice dated December 19, 2006, 71 Fed. Reg. 75902.

⁴ Similarly, the Clean Air Fine Particle Implementation Rule to implement the PM_{2.5} NAAQS allows states to presume that compliance with CAIR qualifies as RACT for electric generating units (EGUs) for purposes of the PM_{2.5} NAAQS (assuming all required CAIR reductions are obtained from EGUs). U.S.EPA finalized this rule on March 29, 2007.

Enclosure A: Calculations

Claimed NOx credits from shutdown of 3 boilers = 2,232 tpy

Credits used for 3 new natural gas turbines = 185 tpy

Remaining Claimed Credits = 2,047 tpy

Average Heat Input (during time in Acid Rain program)*:

	Year	Ozone Season (May 1-Sept 30)	Non-Ozone Season (Oct. 1 –Apr.30)
Unit #1	2000	630,783	851,436
	2001	530,280	465,119
	2002	547,133	237,595
	Average	569,399 MMBtu	518,050 MMBtu
Unit #2	2000	648,597	848,497
	2001	567,904	557,270
	2002	601,442	260,378
	Average	605,981 MMBtu	555,382 MMBtu
Unit #3	2000	611,836	820,867
	2001	566,428	594,526
	2002	530,674	236,277
	Average	569,646 MMBtu	550,557 MMBtu

Acid Rain:

Creditable emissions = (Standard Limit for unit)*(average heat input rate from above)

Ozone Season

Unit #1: 0.46 lb/MMBtu * 569,399 MMBtu/yr = 131.0 tpy

Unit #2: 0.46 lb/MMBtu * 605,981 MMBtu/yr = 139.4 tpy

Unit #3: 0.46 lb/MMBtu * 569,646 MMBtu/yr = 131.0 tpy

Non-Ozone Season

Unit #1: 0.46 lb/MMBtu * 518,050 MMBtu/yr = 119.2 tpy

Unit #2: 0.46 lb/MMBtu * 555,382 MMBtu/yr = 127.7 tpy

Unit #3: 0.46 lb/MMBtu * 550,557 MMBtu/yr = 126.6 tpy

NOx SIP Call Allocation (tons per year) - Ozone Season only:

Unit#1: 59

Unit#2: 54

Unit#3: 52

* Year 2003 was not used because heat input data was only available for part of the year.