

07hr_SC-ENR_CRRule_07-016_pt01



(FORM UPDATED: 08/11/2010)

WISCONSIN STATE LEGISLATURE ... PUBLIC HEARING - COMMITTEE RECORDS

2007-08

(session year)

Senate

(Assembly, Senate or Joint)

Committee on ... Environment and Natural Resources (SC-ENR)

COMMITTEE NOTICES ...

- Committee Reports ... **CR**
- Executive Sessions ... **ES**
- Public Hearings ... **PH**

INFORMATION COLLECTED BY COMMITTEE FOR AND AGAINST PROPOSAL

- Appointments ... **Appt** (w/Record of Comm. Proceedings)
- Clearinghouse Rules ... **CRule** (w/Record of Comm. Proceedings)
- Hearing Records ... **HR** ... **bills and resolutions** (w/Record of Comm. Proceedings)
 - (**ab** = Assembly Bill) (**ar** = Assembly Resolution) (**ajr** = Assembly Joint Resolution)
 - (**sb** = Senate Bill) (**sr** = Senate Resolution) (**sjr** = Senate Joint Resolution)
- Miscellaneous ... **Misc**

Senate

Record of Committee Proceedings

Committee on Environment and Natural Resources

Clearinghouse Rule 07-016

Relating to implementation of Reasonably Available Control Technology (RACT) NOx emission limitations applicable to major sources in the 8-hour ozone non-attainment area in southeastern Wisconsin.

Submitted by Department of Natural Resources.

May 14, 2007 Referred to Committee on Environment and Natural Resources.

May 23, 2007 Germane modifications received.

May 23, 2007 **PUBLIC HEARING HELD**

Present: (5) Senators Miller, Jauch, Wirch, Kedzie and Schultz.

Absent: (0) None.

Appearances For

- Al Shea, Madison — DNR
- Larry Bruss, Madison — DNR

Appearances Against

- None.

Appearances for Information Only

- Scott Manly, Madison — Wisconsin Manufacturers & Commerce

Registrations For

- Caryl Terrell, Madison — Sierra Club - John Muir Chapter
- Katie Nekola, Madison — Clean Wisconsin

Registrations Against

- None.

Registrations for Information Only

- None.

May 29, 2007

EXECUTIVE SESSION HELD

Vote Record

Committee on Environment and Natural Resources

Date: 5/29/07

Bill Number: CR 07-016

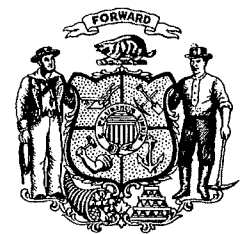
Moved by: Kedzie Seconded by: Miller

Motion: to waive jurisdiction

<u>Committee Member</u>	<u>Aye</u>	<u>No</u>	<u>Absent</u>	<u>Not Voting</u>
Senator Mark Miller, Chair	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Senator Robert Jauch	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Senator Robert Wirch	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Senator Neal Kedzie	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Senator Dale Schultz	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals:	<u>5</u>	<u>0</u>	<u> </u>	<u> </u>

Motion Carried

Motion Failed





Tom Karman
Department of Natural Resources
Air Division

March 19, 2007

HAND DELIVERED

RE: Clean Wisconsin and Sierra Club comments on AM-17-05 (Reasonably Available Control Technology)

Dear Mr. Karman:

The enclosed comments are submitted on behalf of Clean Wisconsin and the Sierra Club. Clean Wisconsin is a non-profit environmental organization that protects Wisconsin's clean water and air and advocates for clean energy solutions. Clean Wisconsin was formed in 1970 as Wisconsin's Environmental Decade and, since that time, has been a voice on behalf of over 10,000 members for solutions to environmental problems. The Sierra Club is the nation's largest and oldest grassroots environmental organization with 800,000 members across the fifty states, and more than 13,000 members in Wisconsin. Sierra Club was formed in 1892 and works on building public support for a clean and healthy environment.

The comments that follow include a lengthy and detailed analysis of our organizations' position on the proposed RACT, which complement the oral comments given at the public hearing on March 15, 2007. Please consider these comments in making revisions to the proposed RACT. Our organizations believe that an effective and meaningful RACT is a critical step in the process of seeking a re-designation request and we will continue to urge the DNR and the State of Wisconsin to prioritize clean air over industry's push for more lenient pollution controls.

Thank you for your attention to this matter.

Sincerely,

Elizabeth Wheeler
Energy Program Specialist, Attorney
Clean Wisconsin

David Bender
Garvey, McNeil, McGillivray
Attorneys for the Sierra Club

Clean Wisconsin and Sierra Club Comments – RACT

Developing and implementing RACT in Wisconsin is an important step in improving air quality. The greater Milwaukee area has been continuously plagued with poor air quality. Non-attainment levels of ground-level ozone have affected the health of Wisconsin citizens for many years, and incidents of hospitalizations for asthma continue to increase, especially in urban areas. The people of Wisconsin are due the dramatic improvement in air quality that effective pollution controls on major sources in the area can achieve.

The Clean Air Act has compelled significant reductions in air pollution emissions, but continued non-attainment demonstrates that it has not been enough. Implementing an effective RACT rule is a key step in ensuring that the residents of Eastern Wisconsin have access to breathable air.

The greater Milwaukee area hosts some of the oldest, dirtiest, and biggest coal-fired power plants in the state. In particular, Wisconsin Electric Power Company (d/b/a We Energies) owns and operates coal-fired power plants located in Milwaukee, Oak Creek, and Pleasant Prairie and Alliant/WPL owns a coal plant in Sheboygan. Together, these four power plants emitted over 35,000 tons of NO_x into the air in Eastern Wisconsin in 2005 according to EPA CEMS data. The development of an effective RACT rule is key in achieving meaningful emission reductions in the non-attainment area of Wisconsin and effecting improved air quality for Wisconsin residents. However, the proposed rule does not do this. Instead, it requires insufficient pollution reductions, including little (if any) reductions before 2013.

EPA defines RACT as “the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.” (44 FR 53762, September 17, 1979) Clean Wisconsin

and Sierra Club agree with the DNR that RACT requires pollution reductions different from, and in addition to the Clean Air Interstate Rule. However, the organizations disagree with the pollution limits being proposed by DNR. First, EPA's definition requires RACT for *particular sources*, while DNR's proposed rule would allow the utility industry to meet emission rate reduction requirements using a fleet-wide average. Second, DNR has underestimated the emission reduction capabilities of commercially available and economically feasible technologies. Third, the DNR set its presumptive "cost-effective" determination at a value that is too low and which, with even a modest increase, would capture the most effective controls on the market-- resulting in significant reductions of NOx and ozone pollution. The resulting regulation significantly short changes Wisconsin citizens who would otherwise benefit from more effective pollution control technologies.

Clean Wisconsin and Sierra Club recommend the following improvements to the proposed RACT rule:

- Set 2009 limits that require actual reductions at all facilities.
- Presume control efficiencies that reflect the actual lowest emission limitation achievable by available control technologies (in particular, SCR technology) today.
- Eliminate the use of a compliance margin in calculating compliance feasibilities.
- Eliminate multi-source averaging options, as RACT by definition is source-specific.
- Increase the presumptive cost-effectiveness threshold to reflect prior RACT determinations made by the Department and other states so as not to unreasonably limit control technologies that should be considered.
- Supplement the "Green Tier" provision in the rule to satisfy the requirements of the Clean Air Act.
- The "low emission exemption" threshold of 50 TPY NOx emissions should be examined because 50 TPY does not represent a "low emission" level for all sources. Some types of sources are low-emitting at much lower levels.
- The rule must require combustion tuning as a routine practice.

1) The Clean Air Act's RACT Requirement is In Addition To, And Different From the Requirements of the Clean Air Interstate Rule.

Clean Wisconsin and Sierra Club agree with the DNR's determination that RACT limits are different from the requirements of the Clean Air Interstate Rule ("CAIR"). Clean Air Act § 172(c)(1), 42 U.S.C. § 7502(c)(1), requires RACT. In enacting this requirements, Congress adopted the EPA's well-know and longstanding definition: "the lowest emission limitation that a *particular source* is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." 44 Fed. Reg. 53,761, 53,762 (1979) (emphasis added); 45 Fed. Reg. 45,314, 45,315 (1980); 45 Fed. Reg. 59,329, 59,331 (1980); 54 Fed. Reg. 53,080, 53,081 n. 1 (1989); 55 Fed. Reg. 39,149, 39,150 (1990); 55 Fed. Reg. 39270, 39, 271 (1990); Memorandum from Roger Stelow, Assistant Administrator of Air and Waste Management, United States Environmental Protection Agency, to Regional Administrators (December 9, 1979). EPA has repeatedly noted that "RACT for a particular source continues to be determined on a case-by-case basis considering the technological and economic feasibility of reducing emissions *from that source* (through process changes or add-on control technology)." *State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; Supplemental*, 57 Fed. Reg. 18070 (April 28, 1992). To Sierra Club and Clean Wisconsin's collective knowledge, the Department has never previously allowed averaging between multiple sources—especially averaging across 28 states--to substitute for the source-specific requirement of RACT. Therefore, the definition of RACT includes two important principles. First, RACT must be applied to sources within the non-attainment area. 42 U.S.C. § 7502(c)(1). Second, RACT must apply to each individual source, based on the technological feasibility and cost of control at the source. 44 Fed. Reg. at 53,762. An interpretation being promoted by certain lobbying groups, whereby compliance with the

CAIR regulations equates to compliance with RACT, fails to satisfy these two requirements of RACT.

Moreover, an analysis by EPA shows that CAIR will not result in the type of advanced pollution controls required by RACT. EPA determined that CAIR will not result in significant NO_x reductions from the largest NO_x sources in the Southeastern Wisconsin nonattainment area. *See* "Contributions of CAIR/CAMR/CAVR to NAAQS Attainment: Focus on Control Technologies and Emission Reductions in the Electric Power Sector, United States Environmental Protection Agency Office of Air and Radiation U.S. Environmental Protection Agency (April 18, 2006). CAIR-level pollution controls are less effective than RACT-level controls, are based on a cost-effectiveness threshold that is very different from the cost threshold used to determine RACT controls, and are not based on the most effective modern pollution controls required by RACT.

2) The Proposed 2009 Limits Do Not Require Enough Pollution Reduction from 2005 and 2006 Emission Levels to be Effective.

RACT is a tool for a state with moderate non-attainment levels to improve air quality. DNR's proposed RACT provisions fail to take advantage of this opportunity to reduce ambient air quality levels of ground-level ozone, a potent pollutant that acutely affects human health and significantly hinders plant growth. By proposing a RACT that will not require actual pollution reductions from every source in the moderate non-attainment area, DNR has overlooked an important aspect of RACT.

Considering the multi- unit and multi- facility averaging option, WE Energies and Alliant will have to make the following actual reductions in their operations:

Table 1. Actual emission reductions required by proposed RACT, by boiler

	Current emission rate*	Feasible emission rate**	2009/ 2013 Limit	Facility and Utility average rate 2013	Reduction Needed 2009/2013 (TPY)	Potential Reduction TPY based on 0.05 lb/mmBtu
Edgewater 3	0.39	0.04-0.11	0.20/ 0.15		489/ 618	876
Edgewater 4	0.25	0.025-0.07	0.15/ 0.10		1038/ 1557	2,076
Edgewater 5	0.20	0.02-0.07	0.15/ 0.10		714/ 1427	2,141
Edgewater Total				0.105	1801/ 3602	5,092
South Oak Creek 5	0.16-0.18	0.02-0.07	0.18/ 0.18		-79/ -79	950
South Oak Creek 6	0.16-0.18	0.02-0.07	0.18/ 0.18		-79/ -79	944
South Oak Creek 7	0.13	0.05 -0.07	0.15/ 0.10		-224/ 336	896
South Oak Creek 8	0.13	0.05-0.07	0.15/ 0.10		-214/ 320	855
South Oak Creek Total				0.13	-596/ 498	3645
Valley 1	0.37	0.10-0.13	0.20/ 0.17		375/ 441	596
Valley 2	0.37	0.10-0.13	0.20/ 0.17		364/ 428	578
Valley 3	0.38	0.10-0.13	0.20/ 0.17		425/ 495	661
Valley 4	0.38	0.10-0.13	0.20/ 0.17		420/ 490	663
Valley Total				0.17	1583/1854	1,854
Pleasant Prairie 1	0.25	.03	0.15/ 0.10		2409/ 3614	4,819
Pleasant Prairie 2	0.21	.03	0.15/ 0.10		1471/ 2697	3,923
Pleasant Prairie Total				0.10	3880/6311	8,742
WE Energies Total				0.12	4868/ 8664	14,872

*Based on data obtained from EPA CEMS, 2005.

**Calculated using 90% control efficiency for low end of range, DNR assumed control efficiency for high end of range.

As the chart above indicates, DNR's proposed rule requires no pollution reduction for the Oak Creek facility in 2009. In fact, the proposed limits are 596 tons higher than the current emission levels for those units. For other units, the proposed 2009 limits require only extremely modest reductions compared to their current emission rates. Further, by allowing multi-facility trading and under-estimating realistically achievable NOx emission reductions, DNR's proposed

rule makes minimal progress toward reducing air pollution. DNR should revise the rule to require an intermediate (2009) reduction *by all facilities* in emissions that will make progress toward meeting the National Ambient Air Quality Standards. Using the proposed rule, WE Energies will merely have to operate the existing SCR controls on Pleasant Prairie at 85% in order to account for all emission reductions that its entire fleet will have to meet for 2009 requirements. This means that zero reduction will be required from Valley and South Oak Creek for at least another six years. In terms of meeting and maintaining attainment levels in the Milwaukee area, the minimalist RACT proposed by the DNR is weak at best.

3) DNR's Proposed RACT Standards for Coal Fired Power Plants Do Not Represent the Ability of Control Equipment To Reduce NOx Emissions.

DNR's proposed RACT standards do not conform to the EPA definition of RACT as "the *lowest* emission limitation" that the plant is capable of with reasonably available controls. By failing to use the *lowest* demonstrated emission rates using feasible technology, DNR has not required major sources to achieve EPA's definition of RACT. More importantly, it is not giving the public the protection from air pollution that the Clean Air Act guarantees.

DNR's proposed emission limitations under RACT (NR 428.22) range between 0.15-0.20 lb/mmBtu for 2009 proposed and 0.10 – 0.18 lb/mmBtu in 2015. This is not representative of the lowest pollution rates available from reasonably available technologies. Selective Catalytic Reduction ("SCR") technology has been proven to reliably reduce NOx emissions by 90%. See *In re Air Pollution Control Construction Permit Issued to Wisconsin Public Service Corporation for the Construction and Operation of a 500 MW Pulverized Coal-Fired Power Plant*

Known as Weston Unit 4 in Marathon County, Wisconsin, Case No. IH-04-21 at 11 (Wis.Div.Hrgs.App. February 10, 2006) (“WDNR assumed a relatively low [SCR] control efficiency of between 80 to 88 percent for NOx. However, there is evidence in the record and in established U.S. Supreme Court precedent that SCR efficiency is likely closer to 90 percent.”)

In fact, DNR staff appear to look at the WEPCO Pleasant Prairie Power Plant for the emission rates achievable with an SCR. While WEPCO has not been required to—and therefore has not—operated the SCR at maximum control efficiency, WEPCO’s public statements confirm that the SCR at Pleasant Prairie is designed to achieve a 0.05 lb/MMBtu emission rate. *See* We Energies and Babcock Power Inc., SCR Optimization and Acceptance Testing at WE Energies Pleasant Prairie Unit 2, Presentation at 2003 Workshop on Selective Catalytic Reduction, Indianapolis, Indiana at p. 9 (Nov. 18-20, 2003) (attached as Exhibit A). WEPCO experienced average inlet concentrations to the SCR of 0.44 lb/MMBtu and average outlet concentrations of 0.05 lb/MMBtu. *Id.* at 22. This represents a nearly 90% control and a consistently achievable emission rate of 0.05 lb/MMBtu, with inlet concentrations (0.44 lb/MMBtu) higher than the boiler exit concentration from other units in Wisconsin.¹ Other units across the United States are achieving similar emission reductions: over 90% reduction and lower than 0.05 lb/MMBtu.

¹ The boiler outlet NOx rates for the South Oak Creek units are under 0.17; the boiler outlet rates for the Valley plant are under 0.40; and for the Edgewater plant under 0.3 (under 0.18 for Edgewater unit 4).

State	Facility	Unit	Controlled NOx*	Uncontrolled NOx **	% Reduction Achieved	SCR Installation Date	Guaranteed SCR NOX Control Efficiency	SCR Vendor
VA	Chesapeake Energy Center	3	0.024	0.437	94.51%	2004	85%	Babcock & Wilcox
WV	John E Amos	1	0.031	0.541	94.27%	2005	90%	Babcock Power
WV	John E Amos	2	0.032	0.539	94.06%	2005	90%	Babcock Power
KY	Elmer Smith	1	0.102	1.594	93.60%	2003		-
WV	Mount Storm Power Station	2	0.04	0.618	93.53%	2004		Alstom
IL	Dallman	32	0.079	1.196	93.39%	2003	90%	Black & Veatch
IL	Dallman	31	0.081	1.198	93.24%	2003	90%	Black & Veatch
MO	New Madrid	1	0.124	1.361	93.24%	2002	93%	Black & Veatch
MO	New Madrid	2	0.124	1.203	93.24%	2000	93%	Black & Veatch
Denmark	Amager	3				2000	94%	Noell

*June 2006 Average, lb/MMBTu

**Jan 2006 Ave., lb/MMBTu

Table 3 shows the emission rates that have been consistently achieved by boiler type, the emission rates representing an 85 and 90% reduction through the use of SCR technology.

Compare these pollution rates to the limits proposed in DNR's rule.

Table 3. NOx Emission rates achievable with SCR

	Boiler Type	Average 2005-06 w/ SCR achieving 85% Control [in lb/mmBtu]	Average 2005-06 w/ SCR achieving 90% Control [in lb/mmBtu]	DNR Proposed RACT 2009/2013 [in lb/mmBtu]	Lowest Emission Rate from Similar Boiler Type (Facility) [in lb/mmBtu]
S. Oak Creek 5	Arch-fired 2,298 mmBtu/hr	0.025 – 0.027	0.0168-0.018	0.18 / 0.18	
S. Oak Creek 6	Arch-fired 2,283 mmBtu/hr	0.025-0.027	0.0168-0.018	0.18/0.18	
S. Oak Creek 7	T-fired 2,608 mmBtu/hr	0.020	0.013	0.15/0.10 [0.1 in EPA Consent Decree]	0.031 (Ghent, Kentucky)
S. Oak Creek 8	T-fired 2,608 mmBtu/hr	0.020	0.013	0.15/0.10 [0.1 in EPA Consent Decree]	0.031 (Ghent, Kentucky)
Edgewater 3	Cyclone 844 mmBtu/hr	0.045-0.047	0.030-0.031	0.20/0.15	0.097 (Dallman, Illinois)
Edgewater 4	Cyclone 3,529 mmBtu/hr	0.026-0.027	0.0175-0.018	0.15/0.10	0.059 (Baldwin Unit 2, Illinois)
Edgewater 5	T-fired 4,366 mmBtu/hr	0.03	0.02	0.15/0.10	0.059 (Baldwin Unit 2, Illinois)
Valley 1	Wall-fired 846 mmBtu/hr	0.051-0.056	0.037-0.034	0.20/0.17	0.097 (Dallman, Illinois)

Valley 2	Wall-fired 846 mmBtu/hr	0.051-0.056	0.034-0.037	0.20/0.17	0.097 (Dallman, Illinois)
Valley 3	Wall-fired 846 mmBtu/hr	0.057	0.038	0.20/0.17	0.097 (Dallman, Illinois)
Valley 4	Wall-fired 846 mmBtu/hr	0.057	0.038	0.20/0.17	0.097 (Dallman, Illinois)
Pleasant Prairie 1	Wall-fired 6,158	0.07 (from baseline)	0.046 (from baseline)	0.15/0.10	0.027 (Ghent, Kentucky)
Pleasant Prairie 2	Wall-fired 6,158	0.07 (from baseline)	0.046 (from baseline)		0.027 (Ghent, Kentucky)

As can be seen in the chart above, DNR's proposed limits are much less stringent than the 90% reduction achievable with an SCR, much less stringent than the 85% control that DNR assumes for an SCR, and much less stringent than the emissions being achieved by similar sources. DNR should apply the 0.05 lbs/mmBtu rate in determining the emission reductions that can be achieved by SCR.

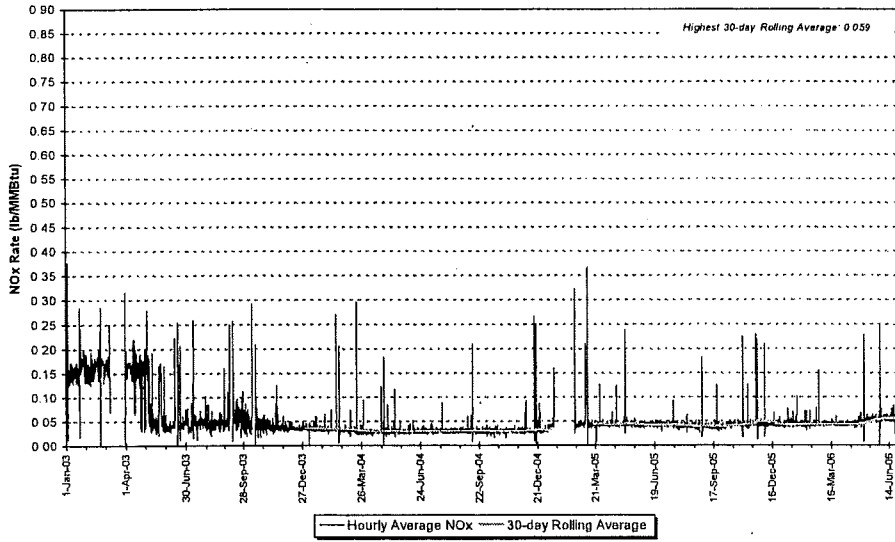
DNR's proposed RACT limits for coal-fired electric generating units (boilers greater than 500 mmBtu/hour) presumes different control efficiencies from SCR. For example, DNR assumes 85% control from SCR on Pleasant Prairie units 1 and 2.² However, SCR control devices are capable of continuously achieving 90% control of NOx at the inlet concentrations relevant for the Wisconsin power plants covered by the RACT rules. Ex. B, pp. 1, 15; Ex. 20, p. 30; Ex. 7, p. 77. A 90% control efficiency on sources subject to RACT can realistically and

² Memorandum from Scott Hassett to Natural Resources Board, *Re: Reasonably Available Control Technology (RACT) program for major sources of nitrogen oxides (NOx) in the moderate ozone nonattainment area and miscellaneous non-substantive corrections to current NR 428 requirements at Table A5 "Summary of the Evaluation of Control Technologies for Wisconsin Specific and Typical Source Coal-Fired Boilers"* (January 3, 2007) (hereinafter "January Memo").

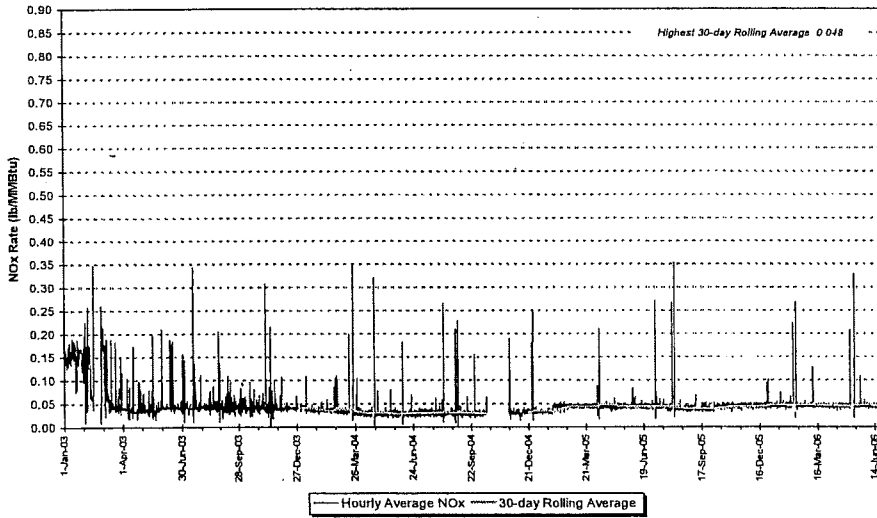
consistently reduce NOx emissions to between 0.03 and 0.05 lb/ mmBtu, which is significantly lower than DNR's projected emission rate of 0.10 – 0.15 lb/mmBtu. Emissions lower than 0.05 are achieved in practice at other units, and required in other states. For example, four plants in Texas that burn similar fuel to the plants in Wisconsin were recently retrofit with SCRs. Below are the emission rates resulting from the retrofit SCRs.³

³ The hourly CEMs data for these charts are included in the accompanying CD.

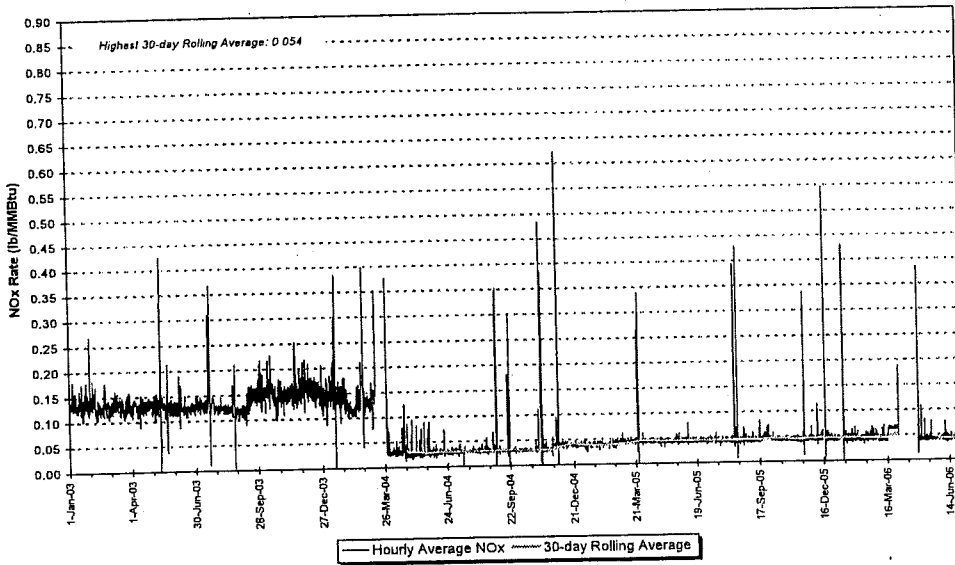
W.A. Parish, TX -- Unit 5 CEMs Data



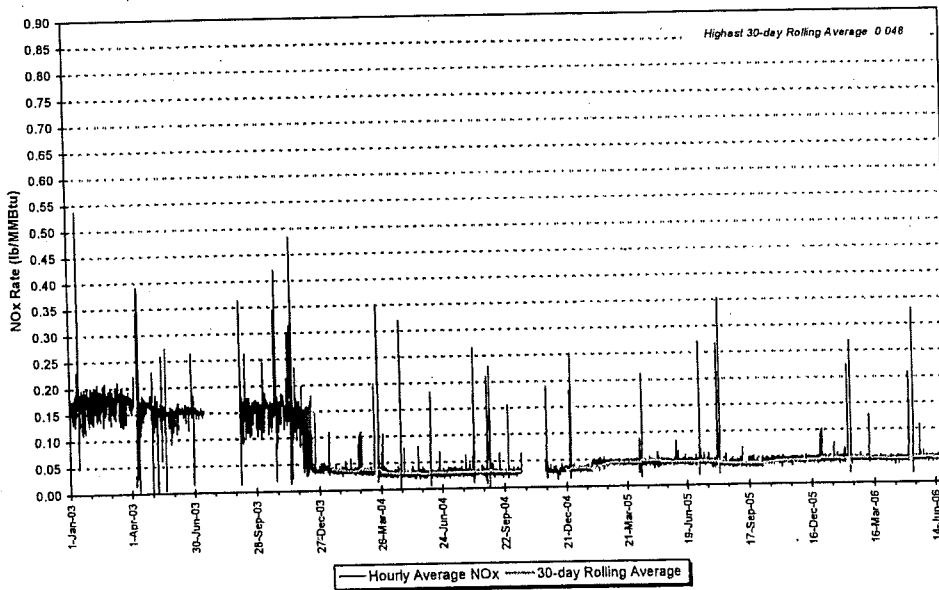
W.A. Parish, TX -- Unit 6 CEMs Data



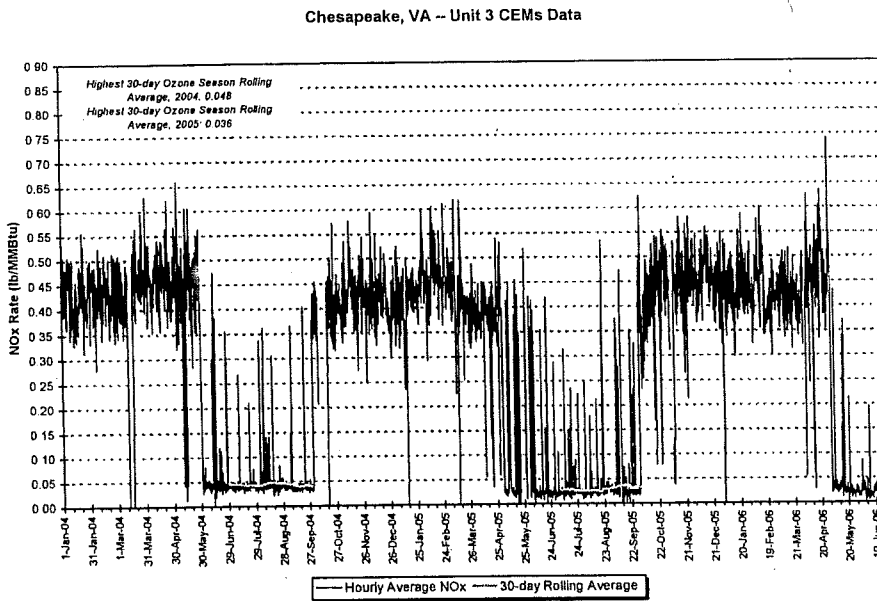
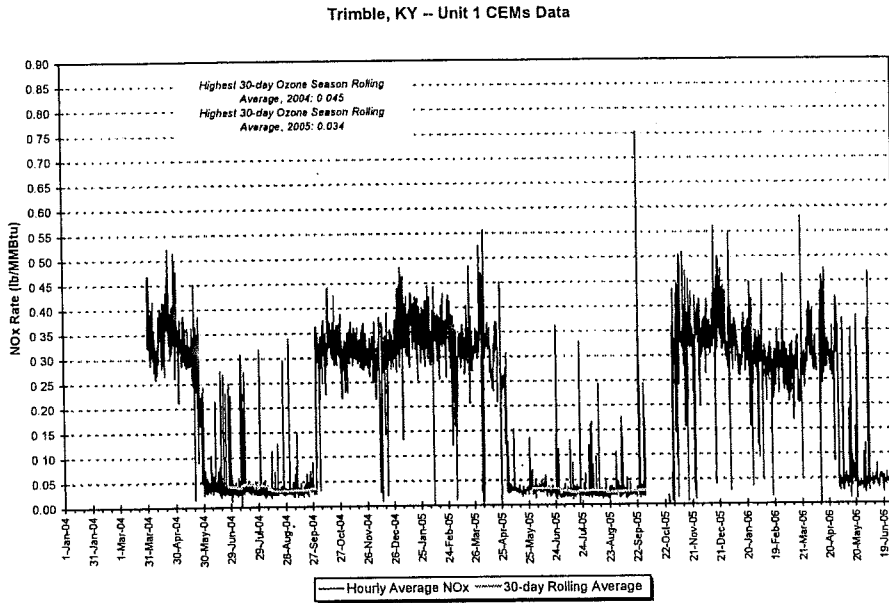
W.A. Parish, TX -- Unit 7 CEMs Data



W.A. Parish, TX -- Unit 8 CEMs Data

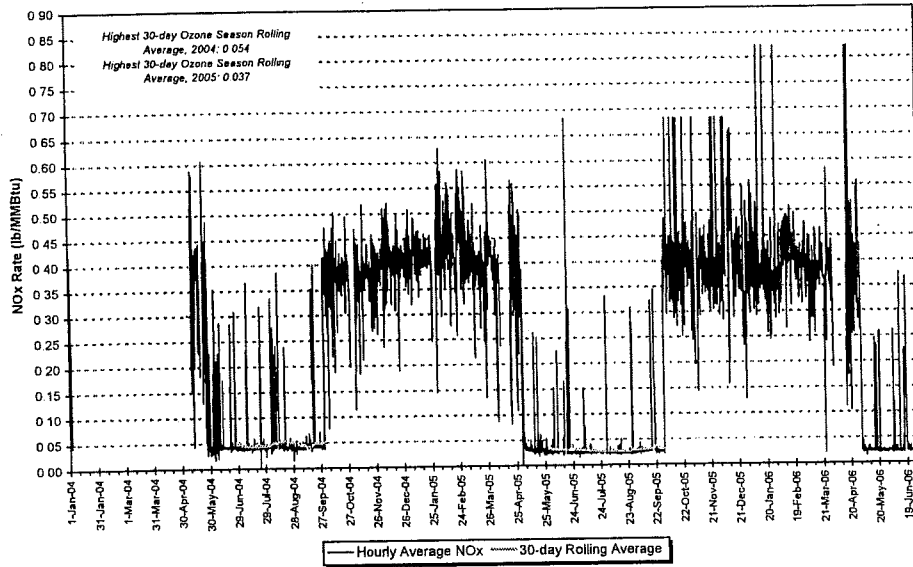


Similar emissions have been achieved by plants that operate SCRs during the ozone season. Below are just a few examples. Note that the red line represents the 30-day rolling average during the periods that the SCR is operated.⁴

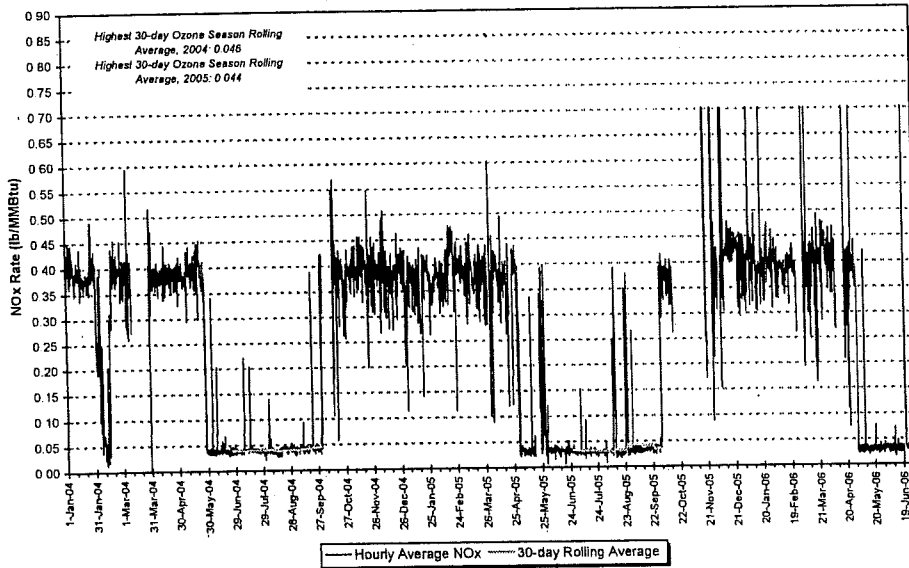


⁴ These data are also included in the accompanying CD.

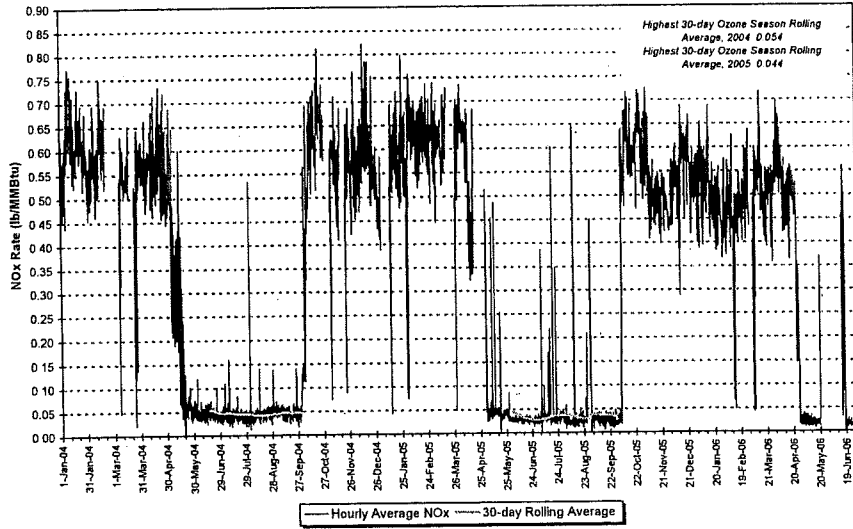
Chesterfield, VA -- Unit 6 CEMs Data



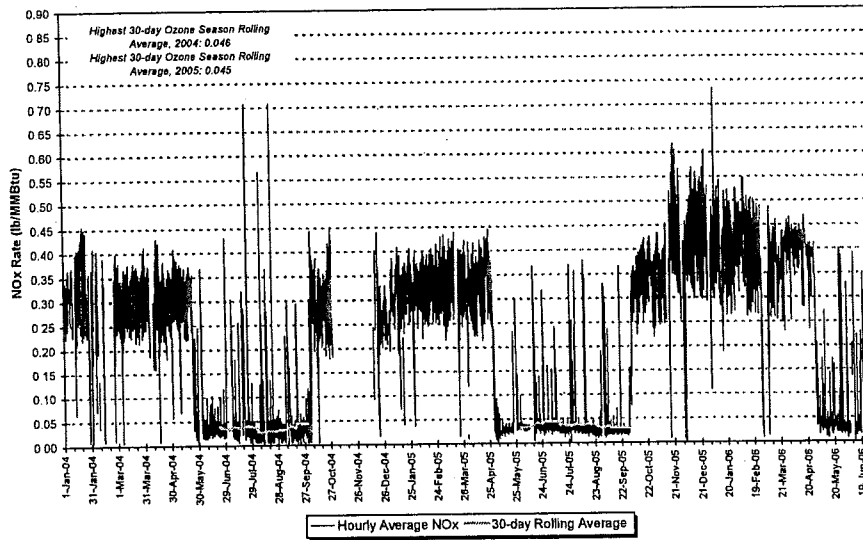
Chesterfield, VA -- Unit 5 CEMs Data



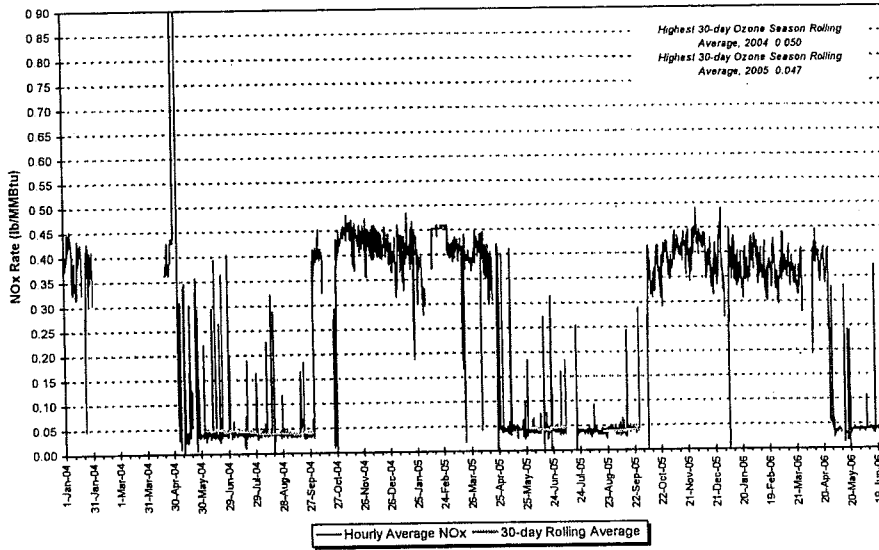
Cardinal, OH – Unit 3 CEMs Data



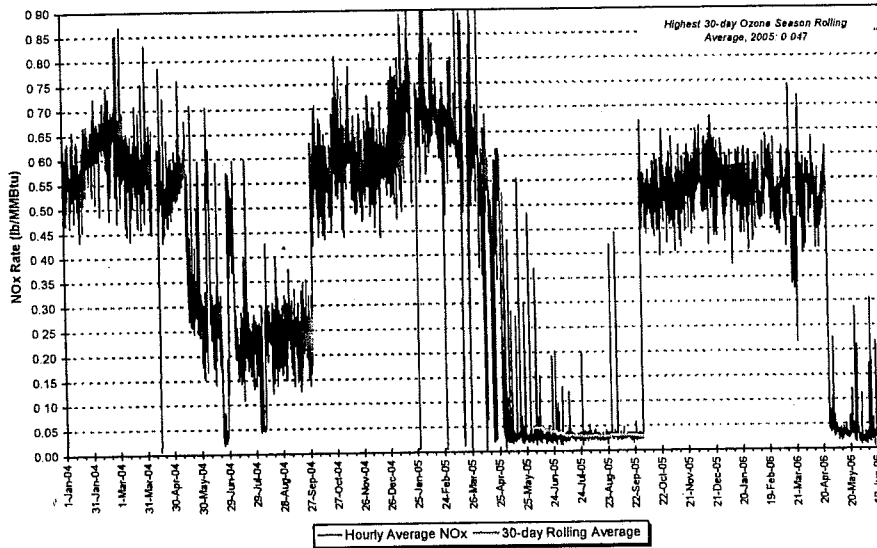
Pleasants, WV – Unit 2 CEMs Data



Colbert, AL -- Unit 5 CEMs Data



John E. Amos, WV -- Unit CS012 CEMs Data



Other states are also requiring much lower emission rates than proposed in DNR's draft rule. For example, Texas adopted rules in 2001 that require coal-fired power plants to achieve the following emission rates:

- 0.033 lb/MMBtu in the Dallas/Ft. Worth area on a 24-hour average
- 0.050 lb/MMBtu on a 30-day average for wall fired units in the Houston/Galveston area
- 0.045 lb/MMBtu on a 30-day average for tangential-fired units.

30 Tex. Admin. Code § 117.106.

DNR should base its RACT analyses on removal efficiencies that more closely reflect the 90% reduction that is currently being achieved many facilities. Detailed analyses of EPA Clean Air Markets data indicates that “90% removal efficiency is currently being achieved by a significant portion of the coal-fired SCR fleet.” Ex. B, p. 15. More than 30 units have achieved greater than 90% NOx reduction. Ex. B, p. 1. Ninety percent NOx removal was achieved on 10,000 MW of coal-fired generation in 2004. Ex. C, p. 77. The McIlvaine reports indicate three of Haldor Topsoe’s SCR installations averaged over 95% NOx reduction during the 2005 ozone season. Ex. D. Other analyses indicate that SCRs routinely achieve NOx removal efficiencies greater than 90%. Ex. B, p. 1 (more than 30 units have achieved greater than 90% NOx reduction); Ex. B, p. 15 (“90% removal efficiency is currently being achieved by a significant portion of the coal-fired SCR fleet”); Ex. E, p. 30 (“significant learning occurring across fleet resulting in increase in unit above 90% removal”); Ex. C, p. 77 (90% NOx removal was achieved on 10,000 MW of coal-fired generation in 2004). Given this track record, DNR cannot justify the low removal rates it assumes in its proposed RACT limits.

Using the 90% removal efficiency factor rather than the lower DNR values of 61%, RACT can be written to require maximum emission rate levels at 0.05 lb/mmBtu rather than 0.10 lb/mmBtu for the large tangential, wall-fired, and arch-fired boilers subject to the rule. A 0.05 lb/mmBtu emission limitation still leaves room for flexibility considering the potential maximum

reductions that are achievable through the use of available control technology. Whereas a limit of 0.10 lb/mmBtu is a truly inadequate representation of the lowest emission limitation that modern technology can achieve, 0.05 lb/mmBtu would be a limit that requires pollution sources in the non-attainment area to reduce emissions rates, but does not unreasonably strain their resources. Reducing the rate limit to 0.05 lb/mmBtu will cut pollution rates in half, and achieve significantly better progress on improving air quality in Wisconsin's non-attainment areas.

For the mid-sized wall-fired (HHR) boilers on Valley, physical attributes of the plant may prevent emission reductions to 0.05 lb/mmBtu and therefore a higher limit of 0.10 lb/mmBtu may be justified for these units. However, the emission rate proposed by DNR is too high to satisfy the requirement of RACT for these units.

Further, the 0.05 lb/mmBtu level is easily achieved by existing technology. SCR system designers have analyzed EPA's Clean Air Market's CEMS data to determine the NOx levels that are currently being achieved by over 100 SCR-equipped coal-fired boilers. This analysis identified 25 units that are achieving NOx emissions less than 0.05 lb/MMBtu on an hourly average basis. Ex. G,⁵ p. pdf 28; Ex. C,⁶ p. pdf 75-77. Others have reported similar results. Ex. F.⁷ Additionally, most major SCR vendors currently offer and provide SCRs guaranteed to achieve 0.03 lb/MMBtu and below for units firing all types of coal. These include Babcock Power, Haldor Topsoe, CERAM, Siemens, and Cormetech. E.g., McIlvaine SCR Hot Topic session on October 12, 2006⁸; Exhibit D. Further, Texas concluded-- over 5 years ago-- that a NOx limit of 0.030 lb/MMBtu "is technically feasible... based on the literature and discussion

⁵ Clay Erickson, Robert Lisauskas, and Anthony Licata, What New in SCRs, DOE's Environmental Control Conference, May 16, 2006.

⁶ LG&E Energy, Selective Catalytic Reduction: From Planning to Operation, Competitive Power College, December 2005.

⁷ M.J. Oliva and S.R. Khan, Performance Analysis of SCR Installations on Coal-Fired Boilers, Pittsburgh Coal Conference, September 2005.

⁸ Voice recording available online to subscribers of McIlvaine Power Plant Knowledge System.

with SCR vendors.” However, DNR presumes only 61% control for an SCR on South Oak Creek units 5 and 6, and only 46% control at Edgewater 5.

There is also significant emission data available demonstrating that coal-fired power plants can achieve much lower emission rates with reasonably available technology. Title IV of the Clean Air Act requires that subject utilities continuously monitor NOx emissions from their boilers and report the data quarterly to the U.S. EPA. This data is uploaded to EPA’s Clean Air Markets website.⁹ Over 200 of the units included in this database have installed the controls that were identified by DNR as RACT for most of Wisconsin’s coal-fired power plants— combustion controls and selective catalytic reduction (SCR). These units installed controls to meet other regulatory requirements, most recently the NOx SIP Call. The data include continuous average hourly measurements of NOx, SO₂, heat rate, megawatt output, and other relevant operating parameters. This data set is the largest collection of NOx data in the world. A review of the data demonstrates that many units are achieving much lower emissions than proposed as RACT by DNR—despite using the same pollution controls that DNR assumes.

⁹ <http://www.epa.gov/airmarkets/emissions/raw>.

Table 4. Achieved NOx Emissions (lb/MMBtu)

YEAR-ROUND

Facility Name	Unit	Highest 30-Day Rolling Average	Period of Operation
W A Parish	WAP5	0.059	4/2003 - 6/2006
W A Parish	WAP6	0.048	4/2003 - 6/2006
W A Parish	WAP7	0.054	3/2004 - 6/2006
W A Parish	WAP8	0.048	11/2003 - 6/2006

OZONE SEASON

Facility Name	Unit	Highest 30-Day Ozone Season Rolling Average			SCR Start Date
		2003	2004	2005	
Ghent	CS02	NA	0.063	0.031	May 2004
Trimble County	1	0.097	0.045	0.034	2002
Havana	9	NA	NA	0.035	May 2005
Chesapeake	3	0.086	0.048	0.036	June-July
Chesterfield	6	0.382	0.054	0.037	2003
Chesterfield	5	0.100	0.046	0.044	May 2003
Cardinal	3	0.121	0.054	0.044	May 2003
Pleasants	2	0.076	0.046	0.045	May 2003
Cardinal	1	0.627	0.088	0.045	2003
Colbert	5	NA	0.050	0.047	May 2004
John E Amos	CS012	NA	NA	0.047	May 2005
Mountaineer	1	0.064	0.060	0.048	2002
Pleasants	1	0.141	0.057	0.050	May 2003
Petersburg	3	NA	0.078	0.050	May 2004
Mill Creek	3	0.393	0.046	0.051	2003
Keystone	1	0.048	0.137	0.051	May 2003
Ghent	1	NA	0.071	0.052	May 2004
Cardinal	2	0.102	0.072	0.052	May 2003
Mill Creek	4	0.350	0.049	0.055	2003
Bowen	1BLR	0.068	0.066	0.058	2001
Bowen	2BLR	0.060	0.061	0.061	2001
Bowen	4BLR	0.060	0.058	0.062	2003
Bowen	3BLR	0.067	0.055	0.065	2003
Hammond	4	0.059	0.062	0.066	2002
James H Miller Jr	3	0.069	0.065	0.068	May 2003
Dan E Karn	2	0.097	0.047	0.070	May 2003

The PRB-fired units comparable to the South Oak Creek, Pleasant Prairie, and Edgewater units are the four year-round Parish units, Havana Unit 9, Miller Unit 3, and Karn Unit 2. The

data from these units demonstrate that most of the units improved their performance in 2005, compared to 2003 and 2004, most likely in response to regulatory drivers (compliance with NOx SIP call was not required until May 2005) and the NOx offset market, rather than any improvement in technology. Parish Units 5 and 6 have operated continuously for over three years, Unit 7 for over two years, and Unit 8 for two and one half years burning the same low sulfur PRB fuel that Wisconsin plants use. These units have also all effectively operated for the entire lifetime of the SCR catalyst. The Parish performance clearly demonstrates that Wisconsin plants retrofit with SCRs can achieve much lower NOx than the 0.10- 0.18 lb/MMBtu RACT limits that DNR proposes. DNR should revise NOx RACT limits to more closely reflect this superior performance potential.

4) The Compliance Margin Should be Eliminated

The Department used a “compliance margin” in determining the emissions limitations for facilities that are subject to RACT. However, based on other provisions in the rule, there is no need for a compliance margin and it should be eliminated. There are two reasons that the compliance margin is unnecessary. First, there is a compliance margin built in to the existing rate limitations. By assuming a lower than 90% emissions control efficiency (some as low as 46%) for SCR technology, the rule already provides significant leeway for achieving a cost-effective emission rate.

There is no basis for a compliance margin allowing higher emissions than are reasonably achievable with applicable control equipment. NOx controls designed and operated correctly achieve continuously low emission rates. The data from EPA’s database demonstrates this fact. Contrary to DNR’s apparent assumption underlying its use of a compliance margin to artificially

increase emission limits, plants operating combustion controls and SCRs achieve continuous emissions much lower than those estimated by DNR without a compliance margin.

Second, the multi-unit and multi-facility averaging provided for in the Rule provides an additional cushion for facilities that are unable to meet the emission limitations. If units are permitted to participate in an averaging program, averaging will allow slightly higher emissions at one plant in exchange for larger reductions at another. Thus, the averaging program provides leeway for plants at which reductions to the 0.10 lb/mmBtu level are less cost-effective.

5) RACT Limits Cannot Provide for Multi-Source Averaging.

Section 172(c)(1) of the Clean Air Act, 42 U.S.C. § 7502(c)(1), requires Wisconsin's State Implementation Plan ("SIP") for the 8-hour ozone nonattainment area to include all reasonably available control measures, "including such reductions in emissions from *existing sources in the area* as may be obtained through the adoption, at a minimum, of reasonably available control technology [RACT]..." (emphasis added). In requiring RACT, Congress adopted the EPA's well-known and longstanding definition: "the lowest emission limitation that *a particular source* is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." 44 Fed. Reg. 53,761, 53,762 (1979) (emphasis added); 45 Fed. Reg. 45,314, 45,315 (1980); 45 Fed. Reg. 59,329, 59,331 (1980); 54 Fed. Reg. 53,080, 53,081 n. 1 (1989); 55 Fed. Reg. 39,149, 39,150 (1990); 55 Fed. Reg. 39,270, 39,271 (1990); Memorandum from Roger Stelow, Assistant Administrator of Air and Waste Management, United States Environmental Protection Agency, to Regional Administrators (December 9, 1979). In short, RACT must apply to each individual source, based

on the technological feasibility and cost of control at the source. 44 Fed. Reg. at 53,762. EPA has repeatedly noted that “RACT for a particular source continues to be determined on a case-by-case basis considering the technological and economic feasibility of reducing emissions *from that source* (through process changes or add-on control technology).” *State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; Supplemental*, 57 Fed. Reg. 18070 (April 28, 1992).

The Department has never previously allowed averaging between multiple sources, rather than source-specific limits required by RACT. In fact, in preparing the RACT rules for NO_x sources the Department has repeatedly noted that RACT is a “unit-by-unit” requirement. *See* NO_x RACT Development Received Comments & Technical Issues, Clean Air Task Force June 5, 2006 Meeting, Power Point Presentation; Rule Development for a NO_x RACT Program Reasonably Available Control Technology, Public Information Meeting, Power Point Presentation.

Further, allowing multi-facility emissions averaging for the purposes of RACT aggravates the sub-par emissions limitations discussed above. By allowing multi-facility averaging, current pollution hotspots, such as the downtown Milwaukee area surrounding WEPCO’s Valley plant will continue to contribute to local unhealthy air conditions. RACT is a measure intended to improve local air quality (unlike CAIR, which was intended to improve regional air-quality). Thus, each plant affected by RACT must be required to reduce pollution locally, and may not be allowed to trade in pollution reductions in other areas to justify continued high emissions by certain plants. In particular, when WEPCO begins operating the SCR that is already installed on Pleasant Prairie, WEPCO will be meeting fleet-wide average requirements under DNR’s proposed RACT and will not be required to make any further

reductions at its Valley facility, at least until the second phase of RACT. Further, certain units such as Oak Creek units 5 and 6, will not be required to make any emission reductions for either the 2009 compliance deadline or the 2013 compliance deadline (these two units each have an emission limit set at 0.18 lb/mmBtu). DNR justifies this based on the determination that installing and operating SCR on these two units is not "cost effective." (See DNR memo, Table A-5) However, Oak Creek units 5 and 6, are already meeting *and at times are surpassing*, the 0.18 lb/ mmBtu limitation (EPA CEMS Data reports these units' NOx emissions rates of 0.16-0.17lbs/ mmBtu for the years 2004-2005). Operating an SCR at only 61% on each of these units will cost an average of \$3464- \$3876/ ton and will reduce emissions from 0.18 lb/mmBtu to only 0.07 lb/mmBtu. This reduction would result in cutting emissions from these two units in half. If the SCR is operated at full capacity (90%), emissions from these two units would be reduced from 2,840 tons NOx per year to only 315 tons NOx per year. This would eliminate over 2,500 tons of NOx pollution from the air in Southeastern Wisconsin every year.

Even considering the Department's requirement that any utility that participates in multi-facility averaging will have to reduce its emissions to 10% below the required maximum emissions rate, the averaging program is not a valid approach to RACT. As discussed above, RACT is a source- specific control determination which cannot be treated as a tradeable allowance for pollution. Further, any local reductions that may have originally resulted from this rule will be far less likely to result if multi-facility trading is permitted.

For example, if Pleasant Prairie operates its SCR on both of its boilers at 85% (a number deemed to be cost effective by the Department – see NR Board Memo, Table A5) its actual emission rate will be reduced to 0.07 lb/mmBtu. Once this emission rate is achieved, the entire WEPCO fleet will not have to make any other reductions from its current NOx emission levels in

2009, and will only have to reduce net NOx emissions by 895 tons per year in order to meet 2013 NOx emission limits.

Multi-facility averaging threatens environmental justice.

Clean Wisconsin and the Sierra Club are particularly concerned that no emission reductions will be required from the Valley plant in downtown Milwaukee. Allowing Valley to continue to emit high levels of NOx into the air has significant environmental justice implications, and our organizations believe that the DNR should pay special attention to these issues. Specifically, NOx is a PM2.5 precursor pollutant. Particulate matter has more impact to local air quality issues than ozone and also contributes to acute health effects – even more so than originally believed – according to recent studies. Among some of the known effects of particulate matter (especially fine particulate matter) to health include complications to respiratory health, cardiovascular health, and premature deaths.¹⁰ Several Wisconsin communities are already anticipated to be in violation of new PM2.5 air quality standards recently promulgated by the EPA.

Providing a rule that allows the electric utilities to choose which plants to upgrade, and which plants to continue polluting, poses the great risk that certain communities will continue to suffer the effects of poor air quality while other communities will benefit from clean air. In this case, the risk that Pleasant Prairie, which is already equipped to make significant reductions in its NOx emissions, will make reductions *in place* of the Valley plant is particularly high. WEPCO will make its decisions based on business models and economics; it is up to the DNR to ensure that residents of Milwaukee are afforded the same clean air protections as residents of Pleasant Prairie.

¹⁰ From <http://epa.gov/pm/health.htm>

Poor environmental health is endemic to areas like those surrounding the Valley plant. Unfortunately, these areas host a high population density as well as a large minority population. Milwaukee's population density near the Valley plant is about 8,795 people per square mile,¹¹ and minority populations comprise 47% of the 53533 ZIP Code.¹² The Pleasant Prairie facility, on the other hand, is located in a ZIP Code comprised of 94% Caucasians, with a population density of only 424 people per square mile. Allowing WEPCO to avoid implementing these significant pollution control requirements on the Valley plant in light of these statistics places an unfair burden on an already disadvantaged population.

Failing to require each unit to make emission reductions by 2009 under RACT will ensure that residents of Milwaukee will still get to breathe the harmful, pollutant-laden air surrounding the Valley plant for at least another 6 years.

6) DNR Should Not Limit the "Reasonable Cost" of Control to \$2500/ton.

DNR purports to base its \$2500/ton cost-effectiveness determination in part on a 1994 EPA memo which cites \$1300 as the upper end of the cost-effectiveness range deemed to be reasonable at the time. Converted into 2007 dollars, the DNR memo to the Board indicates that this is about \$2,000/ton. However, several factors indicate that a higher dollar/ton amount is easily justified as reasonably cost-effective in 2007.

First, the 1994 EPA memo, in addition to identifying \$1300/ton as cost effective, goes on to say that "[i]n some cases, States will need to consider a broader cost-effectiveness range."

And also, "[w]hile cost effectiveness, as described above, is an important consideration, it must

¹¹ Obtained from data compiled on: City Ranks – Population Density Mashup. Online at: <http://kenfelling.com/cityranks/#>, accessed March 14, 2007.

¹² Obtained from 2000 Census data, as collected on <http://www.melissadata.com/Lookups/ZipDemo2000.asp>. Accessed March 14, 2007.

be noted that other factors should be integrated into a RACT analysis. For example, emission reductions and environmental impact should be considered.” (See March 16, 1994 Memo “Cost-Effective Nitrogen Oxides (NOx) Reasonably Available Control Technology (RACT)” from D.Kent Berry, Acting Director Air Quality Management Division, EPA) Thus, DNR’s treatment of \$2500/ ton cost-effectiveness as a blanket cut-off for the consideration of certain control technologies on each unit is inappropriate. Control technologies that achieve a 50% (or potentially even 90%) reduction in overall emissions, such as SCR on South Oak Creek units 5 and 6, should be considered reasonably cost-effective despite their deviation from DNR’s \$2500 limit. In fact, in the explanation of cost-effectiveness in the NR Board Memo on RACT (Attachment A to the January 4, 2007 DNR Internal Memo providing background on RACT), DNR explains that “the cost range referenced in EPA’s 1994 memo was based on control technologies available at that time. Since then, availability, control efficiencies, and cost of control equipment have changed.”¹³ DNR further notes that other states have determined ranges much higher than Wisconsin’s modest \$2500 proposed limit to be reasonably cost-effective. The Northeast Ozone Transport Council as well as South Carolina have reportedly established \$3500/ton as reasonably cost-effective, and the California Air Resources Board determined that a range of \$2,000-\$10,000/ ton is reasonably cost-effective for reduction of NOx pollution. *See* January Memo.

Although there are few prior NOx RACT determinations due to the NOx exemption for one-hour ozone, other RACT level controls (i.e., VOC RACT) have historically been found economically feasible at \$8,000 to \$10,000 per ton, and sometimes as high as \$20,000 per ton.

¹³ Notably, SCRs are being installed at a number of coal fired electric generating units across the United States in response to various regulatory drivers, including the Clean Air Interstate Rule, NOx SIP Call, and ozone attainment demonstration regulations. While the market demand for SCRs may be driving the unit price up, the prevalence of SCRs on the market demonstrates that SCR technology is “Reasonably Available Control Technology.”

See e.g., Metropolitan Washington Council of Governments, Plan to Improve Air Quality in the Washington DC-MD-VA Region at 8-3 (February 19, 2004). This cost range (\$8,000 to \$10,000/ton) is supported by prior Department RACT determinations and EPA Control Techniques Guidelines (“CTGs”). (See June 5 CATF Presentation: \$10k/ton in Clinton Admin; \$3000-3500 OTC RACT 1994; \$2000-19000 TX NOx Program; “VOC RACT costs= upwards of \$10,000 per ton” Public Information Meeting Power Point.) A \$10,000 per ton threshold is also used by DNR as a benchmark for determining whether a control option is cost-effective when establishing BACT limits under NR 405.

By adopting an upper limit of \$2500/ ton cost-effectiveness determination for RACT, the DNR has done only the minimum in achieving NOx reductions in Wisconsin. A modest increase in this number, to \$4,000/ton, would allow for meaningful emissions reductions, even from South Oak Creek, and would dramatically improve air quality in Southeast Wisconsin.

6) Require Green Tier participation to comply with the Clean Air Act.

DNR is required to provide the RACT rules to U.S. EPA for approval into the state implementation plan (“SIP”). The process for submission and approval of a SIP modification requires notice and public hearings on the SIP provisions, including the emission limits, schedules for compliance, monitoring, and reporting requirements. 42 U.S.C. § 7410(a); 40 C.F.R. § 51.102(a). Once the SIP provisions are approved by U.S. EPA, they cannot be modified, except through a full SIP revision and EPA approval process. *Illinois v. Commonwealth Edison, Co.*, 490 F.Supp. 1145 (N.D. Ill. 1980).

The proposed rule includes a provision allowing DNR and a pollution source to modify the requirements of the RACT program without going through the SIP modification process

required by the Clean Air Act and U.S. EPA regulations. Proposed section NR 428.27 allows a pollution source to “enter into a contract... to fulfill the requirements of NR 428...” The rule would specifically allow the source to use a different compliance method, different monitoring, or different reporting than the RACT rules being adopted after public notice and comment. In short, proposed NR 428.27 is unlawful because it allows changes in the substance of the RACT rule without going through the public notice, comment, hearing, and U.S. EPA approval process required by federal law. Section NR 428.27 cannot be approved and should be removed from the proposed rule.

Combustion Tuning

Clean Wisconsin and the Sierra Club support the tuning requirements required by proposed NR 428.23. This requirement is a reasonable and important provision of the proposed rule, and should not be removed from the rule as requested by industry lobbyists.

Industry consultants Focus on Energy and CIBO (Council of Industrial Boiler Owners) emphasize the importance of routine calibration and cleaning as part of boiler tuning as a means for achieving superior efficiency levels. Combustion fuel-to-air ratios are key in optimizing efficiency. Excess air increases flue gas flow, resulting in heat loss, and inadequate air results in unburned combustibles. Thus, Focus on Energy suggests routine boiler tune-ups as a best management practice. *See* “Best Practices: Steam Systems” Focus on Energy publication. The CIBO Energy Efficiency Handbook further describes the benefits of routine tuning: “the general rule is that a 1% reduction in excess oxygen will reduce fuel use by 1%.” Thus, combustion tuning is directly correlated to efficiency and directly correlated to NOx emissions. As such, combustion tuning should be considered in the RACT determination for all steam fired

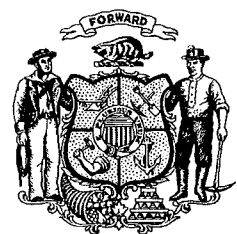
generators as a reasonably available and extremely cost-effective method for reducing NOx emissions. It is imperative that this provision remain in the rule as a mandatory best management practice for steam boilers.

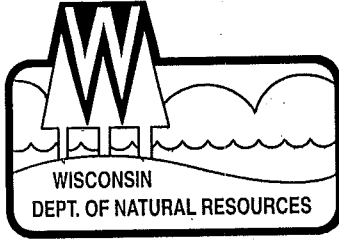
Conclusion

DNR's proposed RACT rule does not adequately address NOx non-attainment issues in Southeast Wisconsin. Further, it does not call for "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility" as required by EPA's definition of RACT. The DNR has proposed a rule based on outdated and uncompetitive price schemes which allows for artificially inflated "lowest emission limitations" and excuses utilities from having to make meaningful modifications to pollution control equipment that will result in cleaner air for Wisconsin's citizens. For the past 30 years, these power plants have successfully avoided taking financial responsibility for damaging our natural resources. The DNR should consider and adopt the regulations above as a method for drastically improving air quality as envisioned by the drafters of the Clean Air Act over 30 years ago.



WISCONSIN STATE LEGISLATURE





State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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May 23, 2007

Honorable Mark Miller, Chair
Senate Committee on Environment and Natural Resources
Room 409 South
State Capitol

Honorable Scott Gunderson, Chair
Assembly Committee on Natural Resources
Room 7 West
State Capitol

Re: Clearinghouse Rule No. 07-016
Implementation of Reasonably Available Control Technology (RACT)
NOx emission limitations applicable to major sources in the 8-hour ozone
non-attainment area in southeastern Wisconsin

Gentlemen:

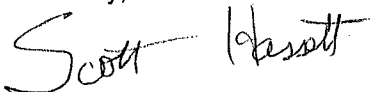
On April 25, 2007, the Natural Resources Board adopted Clearinghouse Rule No. 07-016 and it was referred to your committees for review. Based on comments presented at that meeting, the Natural Resources Board adopted two germane modifications at its meeting on May 23, 2007. Neither modification will significantly affect emission reductions achieved by the rule. The specific modifications are:

1. An exemption for certain newer reciprocating engines that are manufactured and certified to meet EPA emission standards for newly manufactured engines. The recommended modification is proposed in Attachment A.
2. A restructuring of the "Other Regulation Unit" provision which establishes an exemption from RACT requirements for well-controlled emissions units. The modification is for clarity to eliminate criteria which are not pertinent to a unit's qualification for the exemption. The recommended modification is proposed in Attachment B.

Under s. 227.19(4)(b)3., Stats., the Department of Natural Resources submits this as a germane modification to Clearinghouse Rule No. 06-104. A copy of the proposed rule reflecting the modifications is also attached.

The Department requests that your committees take executive action on the proposed rule following legislative hearing.

Sincerely,

A handwritten signature in black ink that reads "Scott Hassett". The signature is written in a cursive style with a large initial "S".

Scott Hassett
Secretary

Cc: Tom Karman – AM
Bob Eckdale – AM
Tom Steidl – LS/5
Carol Turner – LSL/5

Attachment A
Modifications related to exemption of
certain reciprocating engines meeting federal emission standards.

NR 428.21(intro.) is amended to read:

NR 428.21(intro.) Emissions unit exceptions. The emissions units described in ~~subs. (1), (2) and (3)~~ this section are exempt from the emission limitation requirements of s. NR 428.22, but shall comply with applicable record keeping requirements under s. NR 428.24. Once an emissions unit no longer qualifies for an exemption, the owner or operator of the emissions unit shall comply with the requirements of s. NR 428.22 by December 31 of the following calendar year, unless an alternate date is approved in writing by the department and the administrator.

NR 428.21(2m) is created to read:

NR 428.21(2m) RECIPROCATING ENGINES. Any reciprocating engine that is certified to meet the applicable federal non-road engine emission standards specified in this subsection is exempt from the emission limitations of s. NR 428.22(1)(i):

(a) A reciprocating compression ignition engine that is certified as meeting Tier 1 requirements as specified in 40 CFR part 89, if one of the following applies:

1. The engine has a maximum design power output of less than 2,000 horsepower.
2. The engine has a maximum design power output equal to or greater than 2,000 horsepower and has a total utilization during each ozone season of less than 1.5 million horsepower-hours, based on actual measured output.

(b) A reciprocating compression ignition engine that is certified as meeting the Tier 2 standard, as specified in 40 CFR part 89, or a reciprocating compression ignition engine that is certified as meeting the requirements of a more stringent Tier standard, as specified in 40 CFR part 89 or 1039.

(c) A reciprocating spark ignition engine that is certified as meeting the Tier 1 standard or a reciprocating spark ignition engine that is certified as meeting a more stringent Tier standard, as specified in 40 CFR part 1048.

NR 428.24(2m) is created to read:

NR 428.24(2m) RECIPROCATING ENGINES. The owner or operator of an emissions unit claiming exemption under s. NR 428.21(2m)(a)2., shall maintain a record of horsepower-hours of operation for each ozone season. Measurement of horsepower-hours may be determined using recorded data which can be directly related to actual horsepower-hours of operation of the engine including actual total operating hours, fuel consumption, or load and duration measurements.

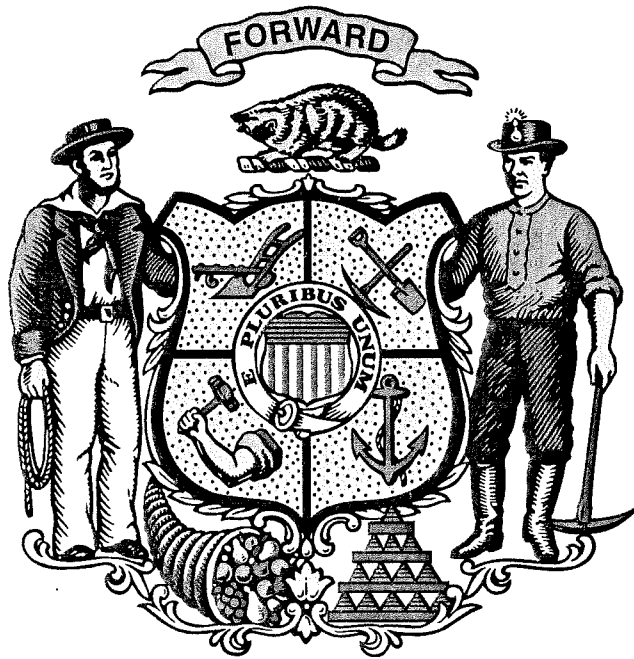
Attachment B
Modification related to clarification of "Other Regulated Unit" provision.

NR 428.21 (3) is amended to read:

NR 428.21(3) OTHER REGULATED UNIT. An emissions unit which is subject to and meeting an emission limitation in s. NR 428.04 or 428.05(3) ~~and which is subject to a federally enforceable condition in an air permit issued prior to January 1, 2006 which limits emissions to no more than 75 tons of NO_x per year~~ is exempt from the emission limitations in s. NR 428.22, if one of the following applies:

(a) The emissions unit is subject to a federally enforceable condition in an air permit which limits its emissions to no more than 75 tons of NO_x per year.

(b) The emissions unit, because of a physical operating constraint, cannot emit more than 75 tons of NO_x per year.



Reasonably Available Control Technology Rule Testimony
by
Al Shea, Administrator, Air and Waste Division
Department of Natural Resources

Before the Senate Committee on Environment and Natural Resources
May 23, 2007

Chairman Miller and distinguished members of the Committee, thank you for the opportunity to discuss the Reasonable Available Control Technology rule with you today. My name is Al Shea and I am the Administrator for the Department's Division of Air and Waste Management. With me today is Larry Bruss, Chief of the Regional Pollutants Section in the Bureau of Air Management.

Why is Wisconsin Developing a RACT Rule for Nitrogen Oxide Compounds?

- First and foremost, there are significant public health effects associated with exposure to ozone including:
 - Increased asthma attacks;
 - Decreased lung function; and
 - Premature death.

Nitrogen oxide compounds, know as NO_x, are primary precursors to the formation of ozone in Wisconsin.

- Using EPA's COBRA Model, the Department estimated the public health benefits for the NO_x RACT rule in Wisconsin to be 2 to 5 times the cost of compliance.
- Recognizing the importance of controlling NO_x emissions in ozone non-attainment areas, the federal Clean Air Act requires states with moderate and worse ozone nonattainment areas to promulgate a RACT rule to control emissions from large sources of this pollutant.
- Lastly, and of great importance, the NO_x RACT rule is a required component of our Ozone Re-designation Request due to EPA by June 15, 2007. It is necessary that EPA approve Wisconsin's NO_x RACT rule before they can approve the redesignation request for the Milwaukee metro area to attainment of the ozone standard.

What are the Federal Requirements for NOx RACT?

- The federal Clean Air Act requirement targets major NOx sources in moderate and worse ozone nonattainment areas. It requires each state to establish emission limitations for major sources of NOx emissions which consider available control technology at reasonable cost.
- The federal NOx RACT requirements affect the following sources:
 - Power plants;
 - Large commercial, industrial and institutional boilers; and
 - Other large fuel burning installations.
- There is no universal federal RACT standard, so each state has considerable flexibility in crafting a NOx RACT rule.
- Although targeted at ozone, which is a summertime pollutant, NOx RACT requirements apply throughout the year.

How does Wisconsin's Proposed RACT Rule Work?

- The Department's proposal does not go beyond federal requirements.
- The Department's proposed rule establishes NOx RACT emission limits for sources based on:
 - Costs for control;
 - Source type;
 - Source size; and
 - Fuel used.
- The proposed rule affects 100 ton/year sources in 2 nonattainment areas:
 - A six county metro area including: Kenosha, Milwaukee, Ozaukee, Racine, Washington, and Waukesha Counties;
 - Sheboygan County.
- There are about 49 units affected by the rule, resulting in an estimated 15,000 tons/year reduction in NOx emissions.
- For power plants, the proposed rule requires compliance with the first phase limits by May 1, 2009 and compliance with a second phase by May 1, 2013. Also, the Department's proposed rule provides for a reliability waiver, allowing power plants to temporarily exceed emission limits in order to maintain power generation.
- Lastly, the Department's proposed rule provides compliance options including intra-facility averaging, multi-facility averaging, and a facility specific variance. The averaging compliance options provide additional environmental benefit as a condition for exercising the extra flexibility provided by the averaging compliance options.

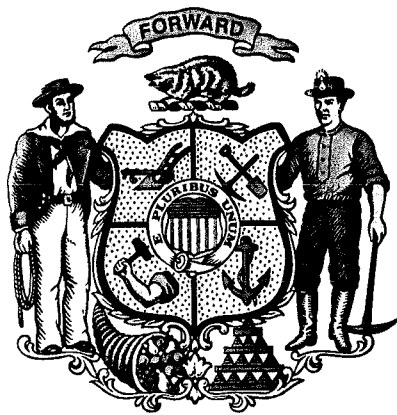
Key Issues:

- EPA suggests in the preamble to its Clean Air Interstate rule (CAIR), that a state can determine that implementation of CAIR meets NOx RACT for power plants. The Department received public comments on its draft rule on both sides of the issue. The Department's own legal analysis concluded that power plants are subject to RACT and that provision is contained in the rule before you today.
- The Department's proposed rule establishes a \$2,500/ton cost threshold for NOx RACT reductions. Public comments on the draft rule ranged from use of \$1,300/ton to \$3,500/ton as more appropriate thresholds. The Department determined its use of \$2,500/ton was a valid cost threshold.
- During the public comment period on the draft rule, some commenters indicated that the Department should not allow intra-facility or multi-facility averaging. However, we believe that these options provide important compliance flexibility for affected sources and use of the compliance options provides additional public health benefit.
- The Department also received numerous comments on the combustion tuning provisions in our draft rule. While we believe that combustion tuning offers low cost emission reduction and energy saving benefits, we became convinced that the requirement in the rule was unnecessary, since sources were already implementing combustion tuning practices for economic reasons.
- Lastly, earlier today, the Natural Resources Board approved two germane modifications to the rule that addressed emission limits for internal combustion engines and clarifies exemption language for previously well controlled units. I have passed out a separate handout that briefly summarizes these germane modifications.

Conclusions:

- The Department's proposed NOx RACT rule meets the federal Clean Air Act obligation without exceeding federal requirements for NOx RACT.
- The proposed rule provides public health benefits that greatly exceed the compliance costs for the rule.
- Lastly, it is necessary that Wisconsin have an approved NOx RACT rule in order for EPA to approve the redesignation requests for the Milwaukee metropolitan area.

I will be happy to answer any questions that you may have on this important air quality topic.

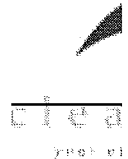


Bier, Beth

From: Caryl Terrell [carylterrell@charter.net]
Sent: Saturday, May 26, 2007 2:01 PM
To: Sen.Miller; Sen.Jauch; Sen.Wirch; Sen.Kedzie; Sen.Schultz; Bier, Beth
Cc: Katie Nekola; Keith Reopelle; carla.klein@sierraclub.org; carylterrell@charter.net
Subject: RACT rule at 5.29.07, Executive Session, Senate Environment & Natural Resources Committee
Importance: High



**SIERRA
CLUB**
FOUNDED 1892



To: Members of the Senate Committee on the Environment and Natural Resources
From: Clean Wisconsin and Sierra Club-John Muir Chapter
Date: May 26, 2007

Re: Clearinghouse Rule 07-016, Relating to implementation of Reasonably Available Control Technology (RACT) NOx emission limitations applicable to major sources in the 8-hour ozone non-attainment area in southeastern Wisconsin.

Clean Wisconsin and the John Muir Chapter of the Sierra Club urge you not to weaken the Department of Natural Resources (DNR) Reasonably Available Control Technology (RACT) limits for Nitrogen Oxides (NOx). The Committee should reject requests to weaken the rule for two reasons:

1) This is a Fight Between the Utility Companies and Other Sources of Ozone Pollution in Southeastern Wisconsin.

There is an internal conflict of interest within some industry lobbying organizations that has not been fully disclosed, but which underlies the RACT rule at issue. The DNR is currently considering requesting the U.S. Environmental Protection Agency to find that southeastern Wisconsin reached attainment of ozone standards ("redesignation"). That redesignation request must be made by mid-June. Some pollution sources in the southeastern portion of Wisconsin want DNR to request redesignation because those sources believe that redesignation will result in less stringent pollution controls for certain companies. However, before DNR can request the U.S. Environmental Protection Agency to find southeastern Wisconsin as in attainment for ozone, final RACT rules must make it through the legislature and be submitted to the U.S. Environmental Protection Agency. Without a final RACT rule, there can be no request submitted to the Environmental Protection Agency.

While Clean Wisconsin and Sierra Club do not believe that the DNR has yet completed the analysis required to request redesignation, we want to alert you to the real issue being raised by certain industry representatives. Some companies in southeastern Wisconsin need the legislative review process to be completed immediately if they have any hope of DNR requesting redesignation. Any requests by

utilities and their lobbying groups to slow down the RACT rule through legislative review is in direct conflict with the interests of other companies in Wisconsin. That conflict has not been transparent thus far in the process. This Committee should stay out of the fray between these special interest groups and should reject any call to weaken the RACT rule.

2) Quick Implementation of Significant NOx Reductions is Critical to Protect Wisconsin Residents from Ozone Pollution.

The current ozone limits are based on outdated science. The federal government is in the process of reviewing the current ozone standards. The unequivocal opinion of the EPA's expert scientists is that the ozone standard must be lowered from the current level. That means that current science tells us that Wisconsin residents are currently subjected to unsafe ozone levels and will continue to be even after the RACT rules at issue are in place. Pollution reductions now, however, will reduce our exposure to unsafe ozone levels. The ongoing EPA revision process for ozone standards also means that any weakening of the RACT rules now will just result in a need in a few years to get even greater pollution reductions to meet the upcoming lower standards.

For these reasons, Clean Wisconsin and Sierra Club submitted comments to the DNR seeking more stringent RACT limits than those in the final DNR rule. While DNR elected not to strengthen the RACT rules in response to these comments, DNR also elected not to weaken the rules in response to the utility industry.

To be clear: in light of Wisconsin's ongoing need to reduce ozone pollution, the current RACT rules do not achieve sufficient pollution reductions. However, the RACT rules are a necessary first step. The Committee should reject any attempts to weaken the rules. Any requests to change the rules should be for the purpose of obtaining more pollution reductions.

Thank you for considering these views.

Caryl Terrell, carylterrell@charter.net
Sierra Club volunteer, Home office 608-833-8828
Katie Nekola, knekola@cleanwisconsin.org
Clean Wisconsin office 608-251-7020

----- Original Message -----

From: Bier, Beth

Sent: Thursday, May 24, 2007 4:51 PM

Subject: FW: 5.29.07, Executive Session, Senate Environment & Natural Resources Committee

From: Sen.Miller

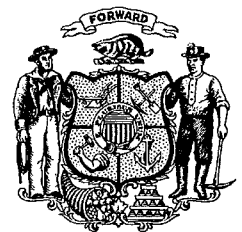
Sent: Thursday, May 24, 2007 4:50 PM

To: *Legislative All Senate; *Legislative All Assembly

Subject: 5.29.07, Executive Session, Senate Environment & Natural Resources Committee

Senate

EXECUTIVE SESSION





To: Members of the Senate Committee on the Environment and Natural Resources
From: Clean Wisconsin and Sierra Club-John Muir Chapter
Date: May 26, 2007

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Thank you for considering these views.



cleanwisconsin

your environmental voice since 1970

Katie Nekola

Energy Program Director

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