



MID-ATLANTIC ENVIRONMENTAL LAW CENTER

Defending the Mid-Atlantic

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VIA ELECTRONIC MAIL

Frank Gao
Air Quality Management
Department of Natural Resources and Environmental Control
715 Grantham Lane
New Castle, DE 19720

RE: Regulation 1142 Committee

Dear Dr. Gao:

The following are the Comments of the Mid-Atlantic Environmental Law Center to Draft 3 of Regulation 1142 (10/5/06) and the Premcor Mass Emissions Proposal (10/20/06).

The Center is pleased to participate in this stakeholder process to reach well-reasoned regulation for emission limitations and timetable for the control of nitrogen oxide from boilers and heaters at the Delaware City Refinery. As it is one of the largest emitters of this ozone and pm2.5 precursor in Delaware, it is appropriate that this Premcor facility be required to make significant reductions of nitrogen oxide to facilitate Attainment of the 8-hour ozone and fine particulate NAAQS. The Center therefore agrees with the purpose of the draft regulation as stated. However, we are disturbed by the direction the draft has taken since the previous iteration and have even greater concern over the proposal advanced at this late stage by Premcor.

1. The concessions made by DNREC in Draft 3 are excessive and/or not well-supported.

RE: 2.3.1.1: DNREC has abandoned the .03 lb/mmBtu position in favor of .04 lb/mmBtu due to opposition from Premcor. First, there is a question as to whether all states which have a .03 lb/mmBtu limitation for heaters and boilers allow inter-facility trading. Has DNREC confirmed this or merely accepted Premcor's word? Even if it were the case that trading was permitted in all such states, there is no issue as to the technical feasibility of such a limitation. In fact, LAER for refinery heaters and boilers is

more than three times tighter than .03 lb/mmBtu. The “envelope” is not being pushed by a .03 standard, and it should therefore be completely justifiable by DNREC in the context of a SIP regulation. A limitation of .04 lb/mmBtu simply does not provide adequate reductions from the facility; it leaves too much on the table. The Center envisions the Department being in the same position in five years’ time—needing additional NOx reductions and wishing it had obtained them from this refinery when it had a good opportunity to do so.

RE: 2.3.1.3 and 2.3.2.2 and the powerpoint from 10/5: The phase-in contemplated in Draft 3 with the major reductions not obtained until 2012 leaves Delaware very vulnerable to violations of the NAAQS. Taking five years to implement these changes is not justifiable from an engineering basis. Though it is an ambling, convenient pace for Premcor, such a timeline leaves the public exposed to high amounts of harmful air pollution for longer than necessary. Regarding the separate treatment on timing for the Coker CO boiler, the Center has a similar concern. At most, 2.3.2 should allow not more than one additional year—January 2010.

RE: 2.3.1.2.: The .07 lb/mmBtu proposed for the SMR Heater is excessive. Earlier data showed the SMR achieving much lower averages, at .06 or less. It is difficult to contemplate a supportable rationale for proposing a higher number in 2009 than what was demonstrated as achievable by this vary unit in 2002. According to Premcor, a limitation of .04 is achievable from the SMR Heater with Ultra Low Nox Burners. Premcor claims, however, that selecting ULNB for the 338 mmBtu/hr. SMR Heater will result in an annualized cost of \$2.28 million and a cost-effectiveness of \$49,615 per ton. According to a guidance memorandum from EPA’s Office of Air Quality Planning and Standards (January 19, 2001), concerning BACT and LAER for NOx on process heaters at refineries, the Premcor number appears to be an egregious exaggeration. In that guidance, EPA estimated that next generation ULNB on a process heater with a 150 mmBtu/hr. firing rate would have an annualized cost of \$2,796, and an average cost-effectiveness of \$58/ton (current generation ULNB would presumably be even more economical). Increasing the annualized cost number provided by EPA to adjust for the higher firing rate of Premcor’s SMR Heater might bring it to the vicinity of \$6,000 annualized. This is lower than Premcor’s assertion by more than a *factor of 8*. Some higher cost for the Premcor project could be expected because of retrofit issues of an existing unit, but it surely will not explain the vast gulf between these two numbers. At a minimum, this rough comparison ought to raise sufficient concern to warrant a closer analysis of Premcor’s cost numbers by the Department.

2. DNREC should conduct its own investigation of costs of controls and cost-effectiveness review.

Since the July Committee meeting, I have expressed disbelief at Premcor’s cost numbers and have advocated that the Department conduct a thorough investigation of them and collect data about the costs of comparable projects from other refineries. Surely given DNREC’s participation in various associations of state environmental

agencies, worthwhile aspects of this investigation could have been accomplished through just a few phone calls by DNREC staff. If an investigation has been done, that fact and its outcome have not been shared with members of the Committee. If it has not been done, there is still time to do so—although there is no longer time to wait. With this much at stake for attainment of the standard and the public health represented thereby, it is ill-advised to simply accept the word of the regulated entity regarding these figures, since they are far too interested in the outcome.

3. At the Coker CO Boiler (22-H-3), Premcor has asserted \$53 million as the cost of an SCR system to control the unit down to 20 ppmv. This number reflects a “dual train” SCR system, with the redundant control system necessary to avoid “unnecessary Coker Unit shutdowns.” Again, this number appears to be far out of range of what is reasonable. First, the size of this unit as a function of firing rate is comparable to an electric generating unit of less than 50 MW. I am aware of coal-fired electric generating units of *over 500 MW* that have installed SCR for roughly \$32 million. Again, while additional cost is certainly contemplated in a retrofit scenario, it will surely not account for the *factor of 15* or more by which the Premcor analysis exceeds the Wisconsin project to which I refer. Second, it is not a given that this SCR must be a “dual train” system, which presumably increases the project cost by a very large percentage. Consideration ought to be given to an SCR system with multiple-layer catalyst beds wherein one of the layers is in reserve and is ready to function when the forward-most layer is removed for servicing/replacement, thus obviating need for unit maintenance shutdown. Another way to avoid dual-train is to erect a tail-end SCR system. The post-controls positioning of tail-end SCR would avoid the catalyst plugging or fouling issues associated with a standard positioning on a process unit of this type. A gas-to-gas heat exchanger that could achieve 90% or better heat transfer would allow the gas reheat required to be minimized, and the NO_x emissions from the reheat itself would be negligible in comparison to the 511 tpy to be reduced by the SCR. The tail-end position might also reduce retrofit costs as it is likely to be more advantageous for ease of engineering and construction than the upstream location. In sum, the likelihood that SCR can be installed at this unit for considerably less than what Premcor projects must be further explored as the true costs will adjust the equation on the cost-effectiveness for the reductions on all affected sources in the aggregate.

4. Reaction to the Premcor Comments of 10/20/06:

a) Regarding point #2, lack of technical and economic feasibility for Coker CO Boiler NO_x controls. The Center is completely unpersuaded by Premcor’s arguments on feasibility and believes they lack a supportable basis. First, it is noted that Premcor only claims that LoTOX is infeasible, and is silent regarding SCR. Yet, in their 10/5/06 analysis, Premcor asserted that SCR is technically feasible for the Coker CO Boiler. In the 10/20/06 Comments, Premcor then proceeds to change the test to one of “technical availability” and invites DNREC to conclude that LoTOX is unproven and therefore unavailable for this unit. Once again, Premcor is silent on SCR. Nevertheless, Premcor’s

view on this issue overreaches in its narrowing of the applicable “source category.” Clearly, refinery heaters and boilers have been equipped with SCR and operated successfully. From the Center’s perspective, the inquiry regarding technical availability is thus resolved, and in the affirmative.

b) Regarding point #4, mass basis for NOx Controls. It is remarkable that as we approach the deadline for publication of the proposed regulation, Premcor should advance an entirely different method for devising the regulation, relying on mass emissions rather than emission rates. Based on the amount of reductions in tons per day Premcor is suggesting, the overall reductions achieved will be far less than those expected even under the weaker draft #3 regulation. The Center would actively oppose a regulation incorporating Premcor’s approach as it would clearly fail to achieve the objective for which it is needed. As a further observation, the Premcor phase 1 reductions are relatively minor, ensuring that high refinery emissions would be contributing to Delaware’s non-attainment of the NAAQS in the first years of the health standard’s application. The only circumstance in which the Center would favor a mass-based approach to this regulation would be as a supplement or backstop to the emission rate limitation to ensure that capacity-expanding projects would not allow the affected units to once again threaten Delaware’s attainment status.

5. Although the Center generally prefers unit-specific limitations to ensure that older units do not continually escape regulation, we would be willing to consider facility-wide averaging (meaning within the set of affected units we have been discussing in committee minus the Coker CO boiler) if the average emission rate remains quite low. The number at which the Center would be willing to accept the averaging approach is 0.034 lb/mmBtu. At this number, most of the units will control through SCR, but the 21-H-701 Crude Heater would presumably remain uncontrolled at 0.043. Over \$10 million in capital costs would thus be avoided, significantly reducing the overall dollars-per-ton figure for cost effectiveness. In so doing, Premcor’s concern for its out-of-pocket expenditures to satisfy this regulation could be likewise reduced and cooperation restored. Under this scenario, of course, the Coker CO Boiler would separately be required to install controls sufficient to achieve 20 ppmv NOx.

Thank you for the opportunity to comment on these important issues in the promulgation of this much needed air quality regulation. Should you have any questions, feel free to contact me at 302-477-2072.

Sincerely,

/s/

Michael D. Fiorentino, Esq.
Executive Director

cc: members of the Committee
Ron Amirikian
Ali Mirzakhali
Jim Werner