Delaware Air Regulation Development

Regulation 1142 Section 2
"Control of NOx Emissions from Large Boilers and Process Heaters
At Petroleum Refineries"

Meeting Minutes
First Review committee Meeting on March 15, 2005
(Final Version as of April 6, 2006)

1. Committee members present

John Deemer, Premcor's Delaware City Refinery
Kevin Stewart, American Lung Association
Pete Jacoby, Power Tech Solution
Taras Lewus, Environmental Resources Management
Mike Gansner, Environmental Resources Management
Ron Amirikian, AQM
Ravi Rangan, AQM
Bill Harris, AQM
Bruce Steltzer, AQM
Frank Gao, AQM

2. Background Presentation

Frank Gao, representing AQM, gave the committee an introductory presentation. The presentation covered the reasons for the initiative, the units potentially impacted, and a timeline for the path forward. The presentation is now available on the Department's Reg. 1142, Section 2 website:

http://www.dnrec.delaware.gov/awm/Info/Regs/AQMPlansRegs.htm

3. Issues and/or Questions Discussed

During the background presentation and thereafter, the following issues and questions were discussed.

(1) Up-to-date modeling results.

During the presentation, Ron Amirikian mentioned the up-to-date information from Mohammed Majeed (AQM staff member responsible for air quality modeling): with all regulations and controls on the books that will achieve emission reductions prior to 2009, the modeling results show that all Delaware monitors would likely indicate attainment of the 8-hour ozone standard in 2009. However, a number of monitors in the Philadelphia-Wilmington-Atlantic City (PWA) non-attainment area would still encounter non-attainment. Both Ron and Frank pointed out to the committee that the non-attainment status of monitors in the PWA would make the whole PWA area remain "non-attainment," which means continuous and additional controls would be needed until the whole PWA area attains the standard. In addition, these additional controls would be beyond the

mandatory reasonable further progress reductions that are required under the federal Clean Air Act by 2008.

(2) Large boiler and heater at non-refinery facilities

After the presentation, John Deemer asked what the Department would do relative to the boilers and heaters with similar heat input capacities but located at non-refinery facilities. Frank answered that the Department is presently engaged in developing a parallel but separate rule making process to cover these units. Ron said the units to be covered by this parallel rule making effort would be the Invista facility in Sussex County and the NRG Cogeneration facility in Dover. Ron added that the Department would form a review committee like this one after the Start Action Notice is approved.

(3) Expected tonnage of NOx reduction from Valero's 10 affected units

John Deemer also asked if the Department has had a specific tonnage number regarding NOx reductions from the 10 units that would be affected by the regulation. Ron and Frank explained that we did not have a target tonnage number, as reductions are needed for different purposes. These include: 1) rate of progress SIP requirements, 2) attainment, and 3) maintenance of the ozone and fine particulate matter standards. They explained that the 10 units represent a significant part of Kent/New Castle's overall point source NOX inventory (over 21%, as indicated in Frank's presentation), and that the objective is to require the units to be well controlled. Once this regulation is finalized the ton per day reductions will be calculated and put into the SIP along with the other initiatives (e.g., power plants, lightering, etc.).

Kevin Stewart noted that a 0.04 lb/mmBTU rate limit was cited in the presentation, and asked whether the Department had pre-determined this level of control on the basis of which the tonnage reduction required would be calculated; or alternately whether the Department would determine how much reduction would be needed first and then derive an emission rate limit (such as 0.04 lb/mmBTU).

Ron responded that we did not follow either approach because levels of controls should depend on availability and feasibility of control technology. Frank mentioned that the rate limit of 0.04 lb/mmBTU in the presentation was a start point that serves as an example of the level of control that has been demonstrated achievable. The Department's review of current technologies indicate this level of control is feasible with ultra-low-NOx burner and flue gas recirculation as demonstrated at one of the Premcor units that will be covered by this regulation. In addition, Ravi Rangan mentioned that this level might not be appropriate for all units, and cited that, for example, a 20ppm limit on the CO boilers may be more appropriate as currently being implemented by various refiners as part of their compliance strategy addressing NOx reductions required by consent decrees. Ravi indicated that is the type of information we expect the interested stakeholders to provide

Kevin also raised some follow-up questions as to whether the 0.040 lb/mmBTU option was truly the most optimal. Specifically, questions were along the following lines: What about 0.035 or 0.045 lb/mmBTU? Was there a distinct and useful break-point in the cost-effectiveness curve for NOx reduction technologies? Should units be looked at individually as to what each one's optimum emission rate might be? These follow-up questions were not truly answered, and would be discussed in the future meeting(s). In addition, Kevin pointed out that because of atmospheric chemistry, equal NOx and VOC

tonnage reductions or equal reduction ratios do not necessarily result in the same reduction in ozone concentrations.

(4) Substitute VOC reduction for NOx reductions.

John asked if the Department would consider allowing Valero to use VOC emission reduction at the refinery to substitute required NOx reduction. He said that Valero thinks that VOC reduction would be more feasible and economically effective than NOx reduction. Ron mentioned that VOC reduction should be separated from this rule. Ravi asked John whether Valero could identify the potential VOC emitting sources where reductions are obtainable beyond those already required by existing regulations, i.e. NSPS, VOC RACT, MACT and HON. John said he would review VOC sources and provide an update at the next meeting. He also said one possible area would be additional controls on the tanks in the tank farm. Ravi and John discussed that all of the tanks containing high vapor pressure liquid already had double seals, and that additional controls would need to go beyond these. Frank asked John to propose options to the Department.

(5) NOx emissions from boilers/heaters less than 200 mmBTU/hr

Pete Jacoby asked what would be the percent of NOx emissions from boilers and process heaters with capacities less than 200 mmBTU/hr Ron mentioned that our 2002 base year emission inventory indicates that portion of NOx emission is insignificant when compared with NOx emissions from larger boiler and heaters to be affected by this proposed rule.

(6) Regional controls for VOC emissions at petroleum refineries

Since a point-source control was listed in the AQM presentation for VOC reduction at petroleum refineries, John asked whether the Department is considering another rule to achieve VOC reductions. Ron explained that MARAMA is conducting a project and looking for regional control(s) beyond RACT to get VOC reductions, and Delaware is a part of this project. Ravi and Bruce Steltzer are DE AQM representatives in the project, and they indicated if Valero had not yet been contacted on it, that they would be shortly.

(7) Expiration of Reg. 39 and effects on Valero

During the discussion, Ron explained that Regulation 39, NOX Budget Program would expire in 2008 with the start of the EPA CAIR program. This means that after 2008 non-CAIR units would be out of the regional trading program. Current DNREC planning is to use this regulation to fill the gap relative to the Valero units.

(8) Regulatory development timeline and future committee meetings

Frank proposed the following timeline for developing this rule:

- Committee Review: March-July 2006.
- Workshop/Information Sessions: From August to October 2006.
- Proposal: November 2006.
- Public Hearing: December 2006.
- Regulation Effective Date: May 1, 2007.
- Compliance Date: April 30, 2009.

The committee had no objection to this timeline. The committee also agreed on the future committee meetings as proposed on the last slide of AQM's presentation.

(9) Draft regulatory language

Ravi suggested that AQM develop a draft of the regulatory language for the committee to review and work on as a starting point as soon as possible, instead of waiting until the fourth committee meeting. The committee agreed. Frank will develop the first draft and distribute it before the second meeting.

(10) Presentation from Valero in Meeting 2

John agreed to give a presentation in the second committee meeting on April 19, 2006, providing Valero's viewpoints on the proposed regulation, and proposing control options where feasible.