



BILL WHITE
MAYOR

OFFICE OF THE MAYOR
CITY OF HOUSTON
TEXAS

October 12, 2009

Lindley Anderson
MC 206
Air Quality Division, Chief Engineer's Office
Texas Commission on Environmental Quality (TCEQ)
P.O. Box 13087
Austin, TX 78711-3087

Via email: siprules@tceq.state.tx.us
Fax: 512.239-5687

RE: Flare Task Force Stakeholder Group: City of Houston Comments on the Draft Report

Dear Ms. Anderson:

Thank you for the opportunity to comment on the TCEQ's "Flare Task Force Draft Report" (Draft Report). The following comments are filed on behalf of the City of Houston.

1. Importance and Urgency of Regulating Flares

The Draft Report points to several sources of information, such as the 2006 Texas Air Quality Study, which support the conclusion that VOC emissions are significantly underreported. Technology such as GasFindIR™ infrared cameras has identified flares as the likely source of those underreported emissions. Moreover, 61% of point source emissions of HRVOCs in the Houston/Galveston/Brazoria (HGB) non-attainment area are from flares. In addition, HRVOC flares frequently don't operate in accordance with their design parameters. The flares operate at lower combustion and design efficiencies than are assumed in the regulations. Therefore, additional regulation, as provided in the Draft Report and these comments, is needed.

The Draft Report indicates that flare issues are recent (pg. 3). However, as noted elsewhere in the Draft Report, in 2000, the U.S.EPA had already identified this problem and noted probable violations of the federal Clean Air Act if flares were used for routine operations. Therefore, because excessive flaring has long been a compliance and environmental impact issue and because flares are such a significant source of HRVOCs, a main precursor to ozone, the TCEQ should act promptly to effectively regulate the use of flares.

Although not listed as a recommendation, the Draft Report includes a description of additional research that is planned by the TCEQ regarding flares. The timing of this research should not delay the regulation of flares to address monitoring, prohibiting the routine use of flares and minimizing emissions from non-routine operations. Because of the urgency of the problem and the wealth of data already available, there is no need to postpone regulating flares until this additional, supplemental research is conducted. There is extensive data available on flare emissions, flare efficiency and controlling flare emissions. For example, concerns such as over steaming of flares were articulated in the 1983 EPA/CMA Study noted below and TCEQ documented these problems in its 2000 Guidance. (“Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers, TCEQ, October 2000, “[Steam to waste gas] ratios greater than 1.0 can degrade VOC destruction efficiency and should be avoided.”)

The 1983 Study, funded by the Chemical Manufacturers' Association (CMA) and U.S. EPA and conducted by flare manufacturer John Zink Company, showed that when steam to gas ratios exceed 3.5, flare efficiencies are degraded. (See “A Report on a Flare Efficiency Study,” CMA, March 1983; “Flare Efficiency Study,” U.S.EPA, July, 1983. See also “Flare Testing Using the SOF Method at Borealis Polyethylene,” Johan Mellqvist, Summer 2000, Chalmers University of Technology; “CFD (Computational Fluid Dynamics) for Simulation of Steam-Assisted and Air-Assisted Flare Combustion Systems,” D. Castineira and T. Edgar, University of Texas (2006); and “Guide for Pressure-Relieving and Depressuring Systems,” American Petroleum Institute (API), March, 1997.

In addition, any supplemental research that the TCEQ conducts regarding flare efficiency should include CFD modeling. If the research validates the CFD modeling, then the CFD model could be used to model and evaluate the performance of any flare in the future.

1. Task Force Recommendations

A. Monitoring

The Flare Task Force recommends monitoring. The City strongly endorses requiring monitoring to ensure that there is more accurate data regarding flare emissions. There should be continuous monitoring of waste gas composition, heat content and flow rate, as well as steam/air assist rate.

TCEQ should require that companies report all flaring events, similar to what the Bay Area Air Quality Management District (BAAQMD) has implemented. This reporting could be automated, based on the waste gas compositional and flow rate monitoring data recommended above, so that TCEQ would be notified in near real-time of the most significant flaring events, to facilitate timely investigations. The flaring data should then be formally reported to TCEQ. TCEQ should post the data on the internet, as is being done by BAAQMD, to add an element of public accountability (see <http://www.baaqmd.gov/Divisions/Compliance-and-Enforcement/Refinery-Flare-Monitoring/Emissions.aspx> for BAAQMD's publically available flaring data).

B. Flare Minimization Plans

Flare minimization plans must be a component of regulating the use of flares and should be added to 30 TAC Chapter 115. Flares should only be used during emergency situations or startup and shut down. As noted by U.S.EPA, flares may not be used during routine operations because flares are not pollution control devices. Flaring from routine operations should be prohibited and enforcement action should be taken by the TCEQ if flares are used as pollution control devices because such use is a violation of the federal Clean Air Act. While the TCEQ is revising the regulations, flare minimization plans, as suggested by the TCEQ, could be implemented through Agreed Orders. The flare minimization plan should address minimizing use of flares during emergency and startup and shut down procedures.

C. Agency Process Changes

Additional scrutiny of flares during permitting so that emission limits and operational parameters are incorporated into the permits should be implemented by the TCEQ. The TCEQ would benefit from the experience derived from the U.S.EPA National Petroleum Refinery Initiative. Through this program, U.S.EPA has implemented measures to reduce hydrocarbon flaring and to evaluate the effectiveness of these measures.

D. Public Outreach

Stakeholder involvement is important and is provided for in the rulemaking process.

Conclusion

Use of flares is a significant problem in Texas and no more so than in the HGB non-attainment area. The TCEQ should act, based on the data available from U.S.EPA and others, to effectively regulate flaring. In addition to promulgating comprehensive rules to monitor flares and minimize the use of flares, as noted in the Draft Report, permitting may be used to impose needed limits on flares. The Draft Report notes that monitoring, operational controls and minimization plans could be required in enforcement actions, through Agreed Orders, especially while the effective regulation of flares is being implemented. The City supports TCEQ's use of effective enforcement to insure that permitted facilities are meeting the requirements in the permits and regulations that currently require that flares meet certain destruction efficiencies. Evidence well-known to the TCEQ shows that combustion and destruction efficiencies are clearly not being met.

A comprehensive program to regulate the use of flares including monitoring, permitting and diligent enforcement would be effective in stopping routine emissions and minimizing non-routine emissions. Sufficient staff with the appropriate expertise should

Comments: TCEQ Flare Task Force Draft Report
October 12, 2009

be assigned to this program to insure it is effectively implemented and maintained over time.

The City of Houston supports the actions recommended in the Draft Report as modified by these comments. These recommendations should be implemented as soon as possible to address the significant problem that excessive use of flares creates for public health and the environment.

Sincerely,

A handwritten signature in black ink, appearing to read 'Karl Pepple', written over a horizontal line.

Karl Pepple, QEP
Director of Environmental Programming