

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

APPROVED MINUTES

Advisory Council Public Health Committee
9:30 a.m., Thursday, August 28, 2003

- 1. Call to Order – Roll Call.** 9:36 a.m. Quorum present: Brian Zamora, Chairperson, Elinor Blake, Victor Torreano (10:07 a.m.). Absent: Ignatius Ding, Linda Weiner.
- 2. Public Presentation.** There were no public comments.
- 3. Approval of Minutes of the June 30, 2003 Joint Meeting of the Public Health and Technical Committees.** Due to a lack of a quorum, this item was deferred.
- 4. Discussion with District Staff on Optical Remote Sensing at Refinery Fence Lines.** Peter Hess, Deputy Air Pollution Control Officer, stated the public's comments on the District's 2001 Ozone Plan revealed an interest to know more about refinery emissions in real-time. This provided the basis for referring to the Council the question as to whether the optical fence line monitoring technology at the ConocoPhillips refinery should be applied to other refineries.

At the May 19, 2003 meeting of this Committee, Rodeo and Crockett residents commented on the optical monitoring system and the data it generates. Residents of North Richmond, Clyde and Benicia are also becoming increasingly interested in air monitoring data. The November issue of "Environmental Manager" will be devoted entirely to optical sensing technology.

Gary Kendall, Technical Division Director, stated that he had reviewed refinery reports for 13 incidents at the ConocoPhillips refinery since 1996. The District issued 11 odor nuisance Violation Notices (VNs) and two visible emission VNs for these events, which involved:

- the flaring of process gas with hydrogen sulfide (H₂S)
- the flaring of sulfur plant feed gas, which is 90% H₂S
- the venting of gases to the flare with high sulfur content from product storage tanks
- the venting from tanks that contained "sour" material
- the steam flushing of process vessels that vented oil droplets into the atmosphere
- a fire in a fixed bed coker
- a spill of high strength sulfuric acid, which generated buoyant droplets of acidic mist

Some of the optical data from 1997 to 2000 have been archived and are unavailable. In four of the six events where optical data were available, the monitors registered nothing unusual. During the remaining two events they were shut down for maintenance. During the July 10, 2002 flaring incident the optical monitors did not detect anything unusual. However, the rise of a buoyant plume from a flare stack tip at an elevation of 240 feet would render fence line detection unlikely. The public observed smoke and flames issuing from the flare and smelled foul odors.

One refinery Ground Level Monitor (GLM) detected higher H₂S levels. Air monitors in Bethel Island, Martinez and Pittsburg detected elevated sulfur dioxide (SO₂) at staggered points in time. This is consistent with a large release of a buoyant plume. An incident occurred on April 16, 1997 involving excess flaring of sulfur plant feed gas. The District issued VNs for odor impacts and public nuisance. While nothing was measured at the fence line, a District monitor at the refinery registered 15 parts per billion (ppb) of H₂S; an east refinery GLM measured 170 ppb of SO₂, and a monitor at Crockett Park registered 15 ppb SO₂. Staff will follow-up on the archived optical data to complete its incident assessment and report back to the Committee.

Ms. Blake noted that major refinery incidents are not reflected in the fence line data, probably due to flare stack height and ultraviolet (UV) monitors that are now widely believed to be faulty. Mr. Kendall observed that emissions from leaks of liquid hydrocarbons (HCs) from the top of 30-foot holding tanks would more likely pass through the fence line monitors. However, on June 11, 2003, the optical monitors did not detect the hydrocarbon (HC) and sulfur compounds released from a tank due to a pressure spike. The District issued a public odor nuisance VN.

Ms. Blake opined that while the citizens near the refinery feel empowered by the optical monitoring system, it appears that these data give a false impression that air quality is safe near a refinery during an incident when, in fact, it is not. This raises public health and cost-benefit issues. Newer and better technology now makes possible the measurement even of refinery flares. A regulation that focuses on installing state-of-the-art optical equipment would provide higher quality data that might lead to the long-term improvement of air quality.

Kelly Wee, Director of Enforcement, replied that the establishment of a monitoring scheme requires specific objectives and an equipment distribution aimed at achieving them. The community near the refinery is concerned with acute exposure to emissions during an incident and chronic health risk from exposure to routine emissions. A single monitoring scheme may not be able to address both concerns. Emergency response requires mobility because meteorology often dictates how monitors are deployed. Fixed monitors of any type are generally less effective in emergencies. A robust, fixed monitoring network using canister samplers that conform to the state's toxics data collection protocols could collect data for the long-term. The District posts an incident report within a day, and often within half a day, of an event. The Contra Costa County Health Department issues an incident report within 72 hours of an event and a second report after 30 days. These reports concern the number of complaints, the time of the incident, what occurred, and the preliminary sampling and monitoring data.

Ms. Blake noted that community members in Rodeo and Crockett have asked the Committee to intervene and make a number of specific recommendations. Additional issues before the Committee concern (a) educating the community about further data requirements beyond what are provided by the optical system, and (b) ascertaining how more data can be provided with the monitoring tools the District already has or could develop through grants. For example, a program to install optical monitors in downtown areas other than Benicia would be influenced by the diversity of terrain in the Bay Area. Mr. Hess responded that Benicia installed optical monitors in the downtown area because almost all of its residences are east of the refinery. The purpose of the monitors is to provide Benicia citizens with real-time, speciated data on what emissions cross the refinery fence line into the downtown area. The City of Portland, Oregon has also installed open path optical monitors in its downtown area.

Chairperson Zamora suggested that the District consider conducting a cost-benefit study that evaluates the relationship between existing and cutting edge monitoring technology, so as to develop a hybrid approach to air monitoring. Mr. Hess responded that while more monitoring data is always desirable, the challenge is how to provide this data to the community on a continuing basis. At present, the District is not allowed to use optical monitoring data for purposes of demonstrating attainment or maintenance of ambient air quality standards.

Ken Kuneniac, Air Quality Permit Manager, suggested that the refinery GLM requirement be reviewed. Some GLMs are 25 years old, and when they were originally cited, the nearby population was small. Air quality rules must by law be reasonable, necessary and enforceable. However, the interpretation and enforcement of optical data has not yet been formalized, nor has an entity been established to referee disputes on the data. New ambient-extracted VOC monitors can measure non-methane and methane organics in real-time. Xontech samplers start sampling only after an analyzer detects a specific threshold. The Committee might consider holding a discussion with industry on the current state-of-the-art in air monitoring and the costs of supporting computer software and hardware for data evaluation and posting on the Internet. The extent to which good neighbor obligations would support such an approach might also be discussed. Improvement of the excellent continuous emissions monitoring (CEM) network in the District would provide even greater public protection. The use of predictive software could also be evaluated for improving the current monitoring capability.

Chairperson Zamora inquired if industry uses monitoring techniques more stringent than the District's. Mr. Wee noted that Chevron sends monitoring staff into the community with H₂S samplers and Tedlar bags when there is an incident. Mr. Kuneniac added that the District monitors air quality from a van, which tracks current data read-outs to identify areas of impact. Each refinery could be required to equip and operate a state-of-the-art air monitoring van.

Jim Karas, Engineering Manager, stated that, in Europe, optical differential absorption analysis is conducted from mobile monitoring vans. It would cost \$30,000 per day to run such a system in this country. Mr. Hess added that Lawrence Livermore Laboratory sought to conduct infrared optical monitoring of refineries from aircraft but requested \$2 million in District funds for this purpose. Staff considered the cost for this type of special study to be prohibitive.

Chairperson Zamora inquired if the installation of monitoring technology has been required as a condition in District litigation settlements. Mr. Hess replied affirmatively. Mr. Wee added that the District uses the Supplemental Environmental Program (SEP) approach in which part of a penalty can be designated to community-based projects in either monitoring or additional mobile source controls. Federal policy requires that there be a nexus with the original excess emission. This involves community buy-in, and staff engages in considerable public outreach in this process. Mr. Kuneniac noted that, as a citizen, he expects the District to adopt and enforce reasonable and necessary regulations and to inform him what the air quality is where he lives.

Mr. Karas added that, at present, the main task before the District is to improve its feedback to the community. Mr. Hess added that in connection with such improvement, the first of three update phases to the District's website is scheduled for completion next month. The website will be linked to real-time, continuous monitoring data for criteria pollutants. The posting of toxics data on the District's website will be included in a future update to the website.

- 3. Approval of Minutes of the June 30, 2003 Joint Meeting of the Public Health and Technical Committees.** There being a quorum present, Mr. Torreano moved approval of the minutes; seconded by Ms. Blake; carried unanimously.
- 5. Committee Member Comments/Other Business.** There was none.
- 6. Time and Place of Next Meeting.** 1:30 p.m., Monday, October 20, 2003, 939 Ellis Street, San Francisco, CA 94109.
- 7. Adjournment.** 10:58 a.m.

James N. Corazza
Deputy Clerk of the Boards