Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94117

APPROVED MINUTES

Advisory Council Public Health Committee Meeting
1:30 p.m., Monday, October 20, 2003

1. **Call to Order – Roll Call.** 1:38 p.m. Quorum Present: Brian Zamora, Chairperson; Elinor Blake, Ignatius Ding, Victor Torreano, Linda Weiner. Also present: William Hanna, Chair, Advisory Council

2. **Public Comment Period.** There were no public comments.

3. **Approval of Minutes of August 28, 2003.** Ms. Blake moved approval of the minutes; seconded by Mr. Torreano; carried unanimously.

4. **Fenceline Monitoring: A Case Study and Industry Perspective.** Phillip Stern, Environmental Superintendent, ConocoPhillips Refinery, Rodeo, stated that the refinery optical monitoring system was installed in 1997 and covers almost 2,000 feet on the north and south fencelines. It includes infrared monitors for detection of 30 hydrocarbon (HC) compounds, ultraviolet monitors for detection of seven compounds, and a tunable diode laser for detection of hydrogen sulfide (H_2S) and ammonia. The community, refinery, and the Contra Costa County Health Services (CCCHS) department negotiated which compounds would be monitored.

   A contractor manages the monitoring system, performs daily checks from a remote terminal and several monthly field checks, downloads and validates all the data, and prepares monthly data reports. The refinery Environmental Department submits the monthly data reports to regulatory agencies, such as the District and CCCHS, and replies to letters from the community.

   The refinery is committed to continuing to provide the community with these real-time data, which are presented in detection levels that have been averaged over five-minute intervals. Several community members have on-line access to it, and in the near future the data will be posted on the County's website. The stakeholders to the system agreed to the alarm points on the system. The high alarms are based on the short-term exposure levels set by the Occupational Health & Safety Administration (OSHA), and the low-level alarms are based on one-hour, time-weighted averages. These alarms are wired to a control room at the refinery.

   Data from 2002 show that of the detections of various hydrocarbons above the detection level, the highest detection level were only a few percentage points of the low-alarm threshold. The sole detection of the toxic compound benzene was only 3% of the low-alarm threshold.

   When the refinery knows there is a problem—such as an odor incident—it checks wind direction, ground level monitors (GLMs) and the fenceline monitors. The latter has never provided the refinery with the first-line of emission detection. When there have been major releases at the refinery, no correlation with the fenceline monitoring data could be identified.

Kevin Buchan, Environmental Manager, Western States Petroleum Association (WSPA), noted that WSPA does not represent the ConocoPhillips refinery in this presentation. He stated:

a) It is questionable that the District has statutory authority under California Health & Safety Code Section 40701(g) to require fenceline monitoring.

b) Optical fenceline monitoring technology is not as accurate or reliable as other technologies and cannot be used for purposes of enforcing ambient air quality standards.

c) Much data have been collected from the Rodeo refinery over five years and to date no correlation between events and measurements can be found based on the optical sensing technology. Such data cannot be used for purposes of seeking emission reductions.

d) Optical monitoring data can conflict with, or even undermine, the Community Warning System in Contra Costa County. If the read-outs that residents observe over the Internet do not support a shelter-in-place warning, when in fact there is a real problem not detected by the optical monitors, this puts residents at risk. Conversely, false readings from the optical monitors may give a sense of fear and concern when none may exist.

e) Optical monitors redirect critical environmental resources, requiring extensive research to verify or invalidate readings and staff time for monitoring and controlling emissions.

f) There is a need to fairly evaluate emission levels of toxics from mobile and stationary sources such as dry cleaners, plaiting companies and high tech manufacturers. District monitors have not detected elevated levels of toxics near refineries at or above levels elsewhere in the Bay Area. The application of fenceline monitoring to the broad array of toxic sources would prove costly. Refinery perimeters also differ, and miles of fenceline monitors would be required to apply a monitoring technology with no proven benefit.

Ms. Blake stated that the community wishes to know what comes from refineries and to retrospectively review emissions data from previous incidents. She inquired as to what value newer optical sensing technology could add to existing optical monitors and GLMs. Mr. Stern replied that GLMs register higher than normal levels of SO_2 when there are large episodes. Gary Kendall, Technical Services Division Director, added that GLMs focus on SO_2 and H_2S. In the siting of a GLM, the District provides input based on meteorology and source knowledge.

Mr. Kendall inquired of Mr. Stern as to the refinery's view of the fenceline monitoring data for the 14 refinery release incidents that the District has identified as having had off-property community impacts. Mr. Stern replied that on July 10, 2002 when there was a total steam loss at the refinery and significant flaring, the fenceline data showed only slight variations. Mr. Kendall noted that slight measurement variation occurred at refinery GLMs, and higher than normal levels of SO_2 were registered at the District's meteorological stations in Martinez, Pittsburg and Bethel Island. Staff's analysis of half of the release events that had off-property impacts since 1997 reveals that the optical monitors did not detect higher levels of emissions.

Ms. Weiner noted that the Committee is evaluating fenceline monitoring efficacy rather than legal questions on statutory authority. The California Air Resources Board (CARB) has issued regulations for dry cleaners. Refineries are large and have a bigger impact on public health.

Mr. Buchan replied that the Environmental Protection Agency (EPA) is revising health risk assessments, and the initial results suggest that refineries are not that significant. Ms. Weiner replied that there is impact from refinery flares or accidental releases of toxic emissions into the atmosphere and local residents are subsequently admitted to hospital emergency rooms.

Mr. Kendall observed that motor vehicles are the major source of ambient air toxics. However, the community is thinking about large release events in advocating fenceline optical monitors. Ms. Weiner inquired as to staff's opinion of the optical monitors. Mr. Kendall replied that they do not capture every possible emission scenario. With the right wind direction, the fenceline monitors will more likely capture a non-buoyant plume release than a buoyant release from a high stack. A review of long-term data from all the refineries would be necessary to identify the best monitoring technology. Mr. Stern added that when the monitoring system was installed its aim was to provide a warning of a release event rather than precise emissions measurements.

Chairperson Zamora inquired as to what it would cost to replace the system with newer equipment. Mr. Stern replied that the optical monitoring system cost $2,100,000 to install. Annual data processing and validation, along with maintenance, cost $400,000 per year. The cost to replace the system would be comparable to the original cost. The refinery is presently considering replacing the ultraviolet monitor, which is no longer technically supported.

Ms. Blake noted that the monitoring system was installed after a release event that the refinery did not inform the adjacent community about for several days, and Rodeo residents strongly endorse the system. Mr. Stern replied that the system has improved community relations and trust. Mr. Buchan added that most refineries also have a Community Advisory Panel that provides for and facilitates communication with the members of the local community.

Chairperson Zamora inquired as to the total value of the rest of the refinery monitoring equipment and if the community has been apprised of the limitations of the 1997 optical technology. Mr. Stern replied that the seven GLMs cost $20,000 each, excluding installation, and each of the ten stack monitors for nitric oxide (NOx) cost $400,000. As to the efficacy of the technology installed in 1997, he could not comment at this time because the refinery is presently negotiating with the community on certain components of the monitoring system.

Ms. Blake inquired as to whether data could be provided to the community from the District's flare monitoring rule in a manner similar to the real-time data provided by the fenceline optical monitoring system. Mr. Stern noted that the rule will require continuous flow monitoring of hydrocarbon and sulfur content going to the flare prior to combustion, based on samples taken every 15 minutes. Mr. Buchan observed that these data will also be available retrospectively through the monthly reports that refineries will be submitting, and will indicate that major reductions in flaring have occurred. Mr. Kendall added that if there is a major release the District's refinery inspectors will also be on the scene promptly, and the flow data may become available even earlier through the incident reports that the District would issue.

Chairperson Zamora stated that at its next meeting the Committee will discuss recommendations on the staff referral regarding the application of optical remote sensing technology to other Bay Area refineries. Ms. Blake requested that a member of the Technical Committee, as well as other District staff including Mr. Kendall, attend the next Public Health Committee meeting.

5. **Committee Member Comments/Other Business.** Mr. Hanna briefly summarized the recommendations on refinery flare combustion issues that were adopted earlier today by the Advisory Council Technical Committee.

6. **Time and Place of Next Meeting.** 1:30 p.m., Monday, December 8, 2003, 939 Ellis Street, San Francisco, California 94109.

7. **Adjournment.** 2:55 p.m.

James N. Corazza
Deputy Clerk of the Boards