BACE 2011-05-27-BAAQMD reply
to BACE HRA evaluation

BAAQMD reply to BACE 5/26/2011 HRA evaluation

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Submitted by Bay Area
For
Clean Environment

Dr. Chernaik –

Thank you for providing comments regarding the Lehigh HRA. However, it is the District's preliminary conclusion that the HRA was prepared in accordance with our direction and the OEHHA AB2588 HRA guidelines. In addition, District staff have conducted AERMOD dispersion modeling to verify the results. The District is anticipating formal comments from OEHHA and will consider them before making a final decision about the approval of the HRA. Please consider my responses to your comments.

- You state that a greater average mercury content should be used. Lehigh indicated that there were analytical anomalies for two sampling days (of 30) in question and requested that they be excluded from the 30-day average; this is often done for questionable data. The 30-day averaging protocol was developed by USEPA and the District believes this methodology is appropriate for estimating emissions from this facility until Lehigh installs a continuous emissions monitor (CEM) later this year in order to demonstrate compliance with the Portland Cement NESHAP. The District has recently issued a permit for the kiln with an hourly mercury emission limit of 0.064 lb/hr (permit is for a carbon sorbent injection system installed to reduce mercury emissions); this is the emission rate used in the HRA for the 2011 production scenario and will be enforced using a 30-day rolling average based on material balance until the CEM is operational later this year.

- Your simple analysis regarding the 8-hour Hazard Index is flawed: you assumed that the overall maximum 8-hour concentration should be compared to the 8-hour REL – this is a common misconception. OEHHA indicates that the 8-hour REL is to be compared to repeated long-term daily 8-hour exposures (e.g., for off-site workers and children at schools or day-care facilities). Formal guidance from OEHHA is not yet available, however, OEHHA provided interim guidance to air districts on April 19, 2010. This guidance indicates that an 8-hr REL should be compared to the annual-average concentration for continuously emitting sources, and that the annual-average concentration should be adjusted by considering the operating schedule for non-continuously emitting sources (e.g., a factor of 4.2 for a source that operates 5 days a week, 8 hours/day). Since Lehigh's kiln is operated more than 4000 hours/yr, the adjustment factor would be about 2.2. The maximum annual-average concentration for a worker (MEIW = receptor 5076, Table 8B) for 2008/09 production is 4.2E-3 $\mu g/m^3$, the average exposure for a worker at the MEIW using the factor of 2.2 would be about 9E-3 $\mu g/m^3$. The 8-hour REL is 0.06 $\mu g/m^3$; therefore the 8-hr HQ for Hg for 2008/09 is about 0.15 - essentially the same as the chronic HQ of 0.14. In addition, current emissions of mercury are about 65% lower than in 2008/09. Mercury is the predominate contributor for chronic hazard index and would also be for the 8-hour hazard index; therefore, the 8-hour HI would not be significant. Because the revised HRA guidance document is not yet available and the 8-hr RELs have not been incorporated into HARP, most districts have deferred implementation of these new RELs, CARB and OEHHA have concurred with this policy.

- You state that the maximum 1-hour concentrations of Hg under the 2013 production scenario are inconsistent with emission rates for other scenarios. However, you failed to consider that improved dispersion will be achieved with the proposed new stack (see Section 6.0, page 58 of 194) that will be installed to meet requirements of the NESHAP. The much taller

stack and higher flow rates will enhance dispersion, therefore the risk estimates are not inconsistent - that's why we do detailed dispersion modeling. Although the 2013 concentration of mercury was not presented in the main report, the 2013 scenario is an optional future alternative analysis, therefore the District chooses to be less stringent in the presentation of results. Once the new equipment and stack are actually installed in 2013 and the new OEHHA HRA guidelines are adopted, the District can perform an updated risk analysis (including 8-hr HI).

Scott