



ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
PUBLIC HEALTH DEPARTMENT

Alex Briscoe, Acting Director
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September 16, 2009

Weyman Lee, P.E., Senior Air Quality Engineer
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

**Re: Proposed Air Quality Permit for the Russell City Energy Center (RCEC)
*Updated Alameda County Public Health Department Comments***

Dear Mr. Lee,

Let me begin by thanking you and the Bay Area Air Quality Management District (BAAQMD) for addressing many of our concerns, and those of our constituents, in the *Additional Statement of Basis, Draft Federal "Prevention of Significant Deterioration" Permit, Russell City Energy Center* document of August 3, 2009. Specifically, we thank the Air District staff for their work with Calpine to limit emissions in every possible way and even gain voluntary compliance on several issues.

However, I continue to have concerns about RCEC's potential to adversely impact the health of Alameda County residents – particularly those living, working, and studying in Hayward – those whom I have a mandate to protect. In my January 2009 letter I cited CARB's research demonstrating that, epidemiologically, there may be an effect of fine particulate matter on the risk of death that is too small to quantify. In effect, the preliminary draft of the CARB paper stated that the science in its current state could show no safe level below which fine particulate matter would have no impact on mortality.

In the *Additional Statement of Basis*, the Air District acknowledges (p95) that the effect of fine particulate matter on mortality has not yet been adequately incorporated into Health Risk Assessment guidelines and that the Office of Environmental Health Hazard Assessment (OEHHA) is in the process of doing so. Furthermore, as referenced in the *Additional Statement of Basis*, Mark Z. Jacobson has recently published research pointing to the potential for locally-emitted CO₂ to form CO₂ domes, leading to localized temperature increases that increase the rate of formation of ozone and particulate matter in these areas.

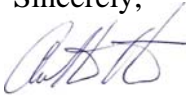
As outlined in my January 2009 letter (enclosed), from the perspective of the Alameda County Public Health Department, the current practice of Health Risk Assessment appears to have three very significant but related inadequacies. The fact that the science on the deleterious health impacts of fine particulate matter is rapidly emerging, and that there is new research on potential *local* GHG

effects, should give the Air District cause to reconsider the standards under which new facilities are permitted.

It is well established that PM_{2.5} and CO₂ are injurious to health, particularly for those with underlying chronic respiratory and/or cardiovascular disease. What is lacking still is our ability to measure the health effects precisely. Prudence and good regulatory practice would seem to dictate that before one confidently declares “no adverse impacts,” a more robust scientific understanding of the deleterious human health impacts of fine particulate matter should be sought.

Thank you for your consideration of these comments and please feel free to call me with any questions or comments at 510-267-8019.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Anthony Iton', written over a light blue horizontal line.

Anthony Iton, M.D., J.D., MPH
Director and Health Officer
Alameda County Public Health Department

Encl.



ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
PUBLIC HEALTH DEPARTMENT

David J. Kears, Director
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January 21, 2009

Weyman Lee, P.E., Senior Air Quality Engineer
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

**Re: Proposed Air Quality Permit for the Russell City Energy Center
Alameda County Public Health Department Comments**

Dear Mr. Lee,

There is a growing body of evidence suggesting that our citizens are more adversely affected by air pollution than the scientific community previously thought. A recent report published in October 2008 by the California Air Resources Board (CARB) provides evidence of premature mortality associated with exposure to fine particle pollution in concentrations as low as 5 micrograms per cubic meter of ambient air. Additionally, in December 2008, the Bay Area was determined to be in 'non-attainment' for PM_{2.5}. This means that if Russell City Energy Center were to apply for permitting today, it would be subject to more stringent emissions impact assessments.

The standard Health Risk Assessments (HRA) that we have seen for both Eastshore Power Plant and Russell City estimate 1) the long term cancer risk, 2) the risk of other non-cancer, chronic illnesses such as heart disease and respiratory disease, and 3) the risk of acute illness, non-cancer-related, such as asthma and heart attacks. All of these take into account both long term and short term exposures and estimate hazard indices for each pollutant (ratios of expected exposures to acceptable exposures) that are then summed, assuming that the pollutant effects are additive rather than cumulative or synergistic.

In addition, the HRA "Surrogate" method allows for the amount of fine particulate matter, PM_{2.5}, to be estimated from the known amount of larger particulate matter, PM₁₀. The true amount of PM_{2.5} does not have to be known and may not be accurately estimated.

Thus the current practice of HRA appears to us to have three very significant but related gaps. First, the models estimate health impacts only in terms of morbidity, not mortality. They do not take into account the growing body of evidence that exposure to fine particulate matter contributes to premature death as well as illness. Second, they do not use an accurate estimate of PM_{2.5}, and third, they do not consider that the health effects of multiple pollutants may be greater than the sum of the individual pollutants.

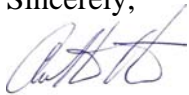
The recent CARB report, entitled *Methodology for Estimating Premature Deaths Associated with Long-term Exposure to Fine Airborne Particulate Matter in California*, concluded that fine particle emissions carry a much greater risk of premature death than they had previously estimated.

Two key findings from the CARB report were: 1) that PM_{2.5} exposure increases the risk of death in the population by 10% for every 10 microgram per cubic meter increase in concentration (an increase of 67% over the prior effect), and 2) that there is no evidence in the literature for a threshold below which exposure is safe. However, there is evidence of premature mortality associated with exposure to fine particle pollution in concentrations as low as 5 micrograms per cubic meter. In contrast, the prior threshold CARB used was the established state standard of 12 micrograms per cubic meter. This new threshold represents a 58% reduction in what exposure might be considered safe, if any.

CARB research staff, along with epidemiologists at many universities throughout the world, is on the cutting edge of studies to determine the true health effects of air pollution. CARB is currently developing criteria for conducting Health Impact Assessment at the small area level, looking at pollution from specific sources in small communities. The agency has an ongoing interest in refining the methods of this type of assessment in order to produce valid estimates of the health effects of pollution.

I urge you to consider the new scientific findings about the health impacts of air pollutants, as well as the Bay Area's new non-attainment status for PM_{2.5}, when permitting Russell City Energy Center, or any future facilities. Please feel free to call me with any questions or comments at 510-267-8019.

Sincerely,



Anthony Iton, M.D., J.D., MPH
Director and Health Officer