

**State of California
AIR RESOURCES BOARD**

Research Screening Committee Meeting

**Cal/EPA Headquarters Building
1001 I Street
Conference Room 550
Sacramento, California 95814
(916) 445-0753
August 18, 2003
9:00 a.m.**

ADVANCE AGENDA

Sole Source Proposal

1. "A Peer Review of Literature: Biomarkers of Exposure to Ambient Air Pollutants," Lovelace Respiratory Research Institute, \$21,246. Proposal No. 2535-230

Biomarkers refer to measurements in biological samples that define individual exposure to a toxic compound(s), a biological response, or a susceptibility to that exposure. Although studies of biomarkers of exposure have been conducted for specific compounds, a literature review of recent studies of biomarkers for air pollutants has not been published, especially one that encompasses both criteria and toxic air pollutants. A focused peer review of the scientific literature on biomarkers of exposure to air pollutants would provide important information to the Air Resources Board (ARB) regarding approaches to estimate human exposure to air pollutants. These approaches could be useful in helping to meet monitoring and exposure provisions of SB25, the Children's Environmental Health Protection Act and in community health studies on susceptible populations.

Contract Amendment

2. "Incidence of Malfunctions and Tampering in Heavy-Duty Diesel Vehicles," University of California, Riverside, \$199,103, Contract No. 01-340

Heavy-duty vehicles (HDVs) are substantial contributors to California's emissions inventory for oxides of nitrogen (NO_x) and particulate matter (PM). The Air Resources Board has committed to reducing in-use emissions from HDVs through such means as State Implementation Plan (SIP) Measure M-17, "Additional Reductions from Heavy-Duty Vehicles". However, achieving these

emissions reductions has been problematic because diagnosing and repairing high emitting HDVs has proven to be quite a challenge, confounded by ambiguities regarding "off-cycle" NO_x emissions from heavy-duty diesel vehicles (HDDVs) ("Off-cycle" NO_x emissions are high levels of NO_x emissions that occur because certain HD diesel engines employed "defeat devices" that allowed the engine to comply with the certification standards when tested on an engine dynamometer in the laboratory, but which resulted in high in-use NO_x emissions when the engine was operated in an actual vehicle in the real world). Some in-use HDDVs exhibit high NO_x emissions, but it is not clear if these high emissions are due to "off-cycle" NO_x engine control strategies, or if it is because the engine has experienced some sort of malfunction. The objective of this amended research project is to procure, inspect, and emissions test, a small fleet of in-use HDDVs. In the event of high emissions, the vehicle engine would be diagnosed to determine the cause of high emissions, and if possible the engine would be repaired. This would be accomplished by performing laboratory emissions testing at the ARB's heavy-duty vehicle Stockton Laboratory and over-the-road emissions testing utilizing the University of California, Riverside mobile emissions trailer. The results from this project would shed additional light on the causes and control of NO_x and PM emissions from HDDVs, and would assist ARB decision-makers in determining how to formulate effective policies for the further control of in-use emissions from HDDVs.

Other Business

3. Planned Air Pollution Research, 2003/04

The Board conducts a research program to support clean air program in accordance with the California Health and Safety Code. The Board's research program delves into the causes and effects of, and solutions to, the air pollution problem in California. Each year research ideas are solicited from the public and are evaluated for possible inclusion into the Board's Research Plan. This year's solicitation was issued on May 27, 2003 with a deadline of June 27, 2003. The Research Screening Committee (RSC) will review the research ideas and their comments will be forwarded to the Executive Research Review Committee for their use in developing the Planned Air Pollution Research for Fiscal Year 2003/2004. The final version of the Plan will be presented to the Board in November 2003.