

# Proposed air pollution standards will do nothing to save lives

by Colin Lowry

Under the banner of creating cleaner air, the U.S. Environmental Protection Agency proposed tighter standards for ground-level ozone and particulate matter in November 1996. Although these standards would force industries to install billions of dollars of emission-control equipment, there is increasing evidence that the standards are not based on real science. The EPA claims that the new standards are justified, because they will save lives; the reality is that the tighter standards not only will *not* save any lives, but instead will put many more lives in jeopardy, by shutting down industrial production, stifling economic growth, and forcing more people into poverty. It is ironic that the EPA is claiming that there are more cases of respiratory disease, with air pollution as the culprit, although the nation's air quality has been improving steadily over the last 20 years, according to the EPA's own reports.

The proposed new standards would tighten the ozone standard from 0.12 parts per million (ppm) average over 1 hour, to 0.08 ppm average over 8 hours. Also, new standards for previously unregulated particulates of 2.5 microns (2.5 millionths of a meter) in size, known as PM 2.5, will be introduced. The present standards, resulting from the Clean Air Act of 1990, have already burdened the United States with increasing costs of pollution controls, and there are still at least 70 areas of the country that do not meet the present standards, and some that never could.

The evidence for the new standards is based on flawed statistical correlation studies, and has almost no clinical or laboratory studies supporting it. The Clean Air Scientific Advisory Committee (CASAC), which is responsible for reviewing the data to support the new standards, was split internally on the issue. Many said that there was not enough research to make the EPA's case, and that the available research showed that the present standards were adequate. Under pressure from the EPA (which appoints the members of CASAC), the dissenting members eventually supported the new standards.

## Congressional hot issue

The new standards have been a controversial issue in Congress, with hearings taking place in the Committee on Science in the House, and the Committee on Environment and Public

Works in the Senate. Early in May, 115 Congressmen sent a letter to President Clinton, asking him not to implement the new standards. On the Senate side, six Democratic senators, including Robert Byrd (W.V.) and John Glenn (Ohio), did the same.

On the side of the EPA, the environmentalists, led by the Sierra Club and the Natural Resources Defense Council, have lined up to support the implementation of the new air standards.

Estimates of the cost of implementing the ozone and particulate standards range from \$6.5 billion a year according to the EPA, to over \$60 billion a year, according to Alica Munnell of the White House Council of Economic Advisers. Also, the number of metropolitan areas in non-compliance would increase to at least 140, including many that are presently in compliance with the 1990 standards.

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## Interview: Dr. William B. Innes

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### 'No good scientific basis for EPA's standards'

*Dr. Innes received his Ph.D. in physical chemistry at the State University of Iowa in 1940. He has 20 years experience working on catalysts for exhaust treatment, and developing pollution-measuring devices while with American Cyanamid Research Laboratories. Innes moved to Upland, California, in 1964, and formed a research and development company to work on the smog problem. He has worked as a consultant on the effects of lead in gasoline, incineration efficiency, acid rain, stratospheric ozone, as well as reviews of various pollution control agency proposals, including the current EPA proposal. Innes is the author of many articles on various aspects of pollution.*

**EIR:** On what basis does the Environmental Protection

Agency recommend the changes to the ground-level ozone standard?

**Innes:** The primary argument is relating asthma to ozone. Apparently, the only new health study on ozone was carried out by George Thurston et al., at a so-called “asthma camp” where the kids were told that there were high ozone levels, which biased the results. Even so, only a weak association between ozone levels and asthma was found. Steve Milloy has written a detailed, humorous analysis of this study, called “Summertime Haze,” that really highlights its flaws. There is almost nothing cited in the *Federal Register* by the EPA to support the standards change. There are respiratory effects at ozone levels over 0.2 parts per million (ppm), but the lower levels are not harmful, and in fact people acclimate to these peak levels. In the past, in the South Coast Air Basin of California, peak levels were as high as 0.4 ppm for ozone.

**EIR:** What are the primary factors regulating ground-level ozone?

**Innes:** Sunlight and temperature inversions in the atmosphere due to weather, are the primary factors. Usually in the air, temperatures decrease with increasing altitude. An inversion is the opposite, with a hot layer on top of cooler layers; it acts like a lid, creating a closed circulation system.

**EIR:** So, ozone is not man-made?

**Innes:** It is not emitted by man-made sources; it is formed in the atmosphere. There are chemicals which contribute to ozone formation that are emitted by plants, such as hydrocarbons. Trees emit turpenes that are smog formers.

**EIR:** Do you think the South Coast Air Basin in the Los Angeles area could pass the new standards, even if no one lived there?

**Innes:** No, I don't think the basin would meet the new standards if no one lived there. There are natural hydrocarbon and nitrogen oxide emissions, and frequent brush fires. The area was known by the Indians as the “smoke valley.” Smog formation would produce ozone levels of at least 0.1-0.2 ppm. Because the area is between the mountains in the east, and the ocean to the west, it is very prone to inversions in the atmosphere. If the inversion levels are below the top of the mountains, the basin will have higher smog levels. The smog clears up when the inversion rises over the mountains, and the predominant west winds can disperse the smog.

**EIR:** The EPA has claimed that there is an increase in cases of asthma, especially in children, over the last 15 years. It claims that the new standards will protect children from acquiring asthma; yet, its own data show that particulates and ozone have been decreasing nationwide for the last 20 years. What do you think about this?

**Innes:** I think that showing increased asthma with decreased particulate levels is not a good argument for more particulate controls.

**EIR:** Are there any clinical or laboratory studies to support the claim by EPA that the present ozone standard leaves many people at risk?

**Innes:** There were many clinical studies on ozone prior to adoption of the current 0.12 ppm/1 hr. maximum ozone standard. These showed temporary respiratory effects from levels exceeding about 0.2 ppm. However, even allowing for a factor of safety, this work did not justify a standard below 0.12 ppm, and I don't think that this standard level leaves many people at risk. Man has always been exposed to peak levels around 0.1 ppm and presumably has adapted to it. Experience in the South Coast Basin suggests adaptation to levels of 0.2 ppm without real evidence of serious effects. Outsiders notice our smog much more than locals.

**EIR:** In the case of the new particulate standard for particles of 2.5 microns, is there any reason to believe these particles are a threat to human health?

**Innes:** There is no good reason to think that simply because particles are under 2.5 microns in diameter, they are particularly harmful. This applies particularly to the Los Angeles basin, where such particles are primarily harmless water-soluble salts. Several CASAC members wanted to exclude PM 2.5 from regulation, as they probably thought they were not toxic.

**EIR:** Are these particles easily cleared from the lungs?

**Innes:** Yes, it's like a gas; it is likely to be exhaled. The salts such as ammonium nitrate are water soluble, and would be dissolved, absorbed, and naturally excreted by the body.

**EIR:** How do the statistical studies that claim weak associations between mortality and particulates, measure the amount of particulates in the air, and relate that to personal exposure?

**Innes:** Values of PM 2.5 used in the statistical association calculations were essentially all based on questionable estimates. Some related levels to airport visibility data. Other studies related it to distant PM 10 monitoring station data. Actual exposure primarily depends on indoor air, which is quite different. On the average, people spend much more time at home or in air-conditioned offices than outdoors.

**EIR:** How can these studies untangle natural from industrial sources of these particles?

**Innes:** Relating the particulates to sources can be done in a crude way from microscopic examination and chemical analysis. However, since the particulate in the Los Angeles basin, where levels are high, is mostly ammonium nitrate,

I think local regulators will unjustifiably assume that NO<sub>x</sub> (nitrogen oxides) emissions have a 1 to 1 relation to particulate level. But, more NO<sub>x</sub> controls will result in an increase in ozone levels because nitric oxide (NO) reacts with ozone.

**EIR:** When several of the statistical studies that claim associations between increased particulates and daily mortality, are re-analyzed, and important variables such as humidity and temperature are included, the associations break down. What do you think about these studies? Are they manipulating what is included in the analyses to bias the conclusions?

**Innes:** I would expect that the claimed weak associations in these studies would break down. Temperature is a major factor, as high heat and humidity send more people to the hospital due to stress, especially if they already have health problems. There is a natural tendency to bias results in favor of the funding agency, by overlooking or minimizing confounding variables.

**EIR:** The particulate matter in the air is obviously made up of a large variety of particle types. Are there laboratory studies that analyze specific types of particles and their health effects? Could you describe some of the results?

**Innes:** Clinical and animal studies were made on various particulate materials, such as silica dust, diatomaceous earth, talc, and coal dust, under the auspices of the Government Industrial Hygienists, before air particulate controls. This group was responsible for setting standards for exposure to various particles in the air in the workplace, long before the Clean Air Act. Workplace standards that resulted are orders of magnitude higher than any of the subsequent air standards. Subsequent animal and clinical studies on particulate components in air failed to show significant effects at levels 100% higher than atmospheric levels. A possible exception is acidic sulfate particulate. However, changes in fuel sulfur content and emission controls are such that this component is now unimportant, as it is a very minor component in the air.

**EIR:** What are the majority of the particulates found in the South Coast Air Basin, and what health effects would they have, if any?

**Innes:** Based on chemical analysis of fine particulate matter when and where particulate levels are high in the Los Angeles basin, they are primarily non-acidic ammonium nitrate and ammonium sulfates. Nitrates and sulfates are end products of the photochemical smog process. The ammonium fraction is derived from agricultural sources. These water-soluble salts are normal body constituents, and would be expected to be non-toxic and dissolve in respiratory system fluids. Animal and human inhalation tests on aerosols of ammonium nitrate and other non-acidic salts showed no significant respiratory effects, at levels much higher than atmospheric.

**EIR:** Are there any studies on animals that would explain a biologically plausible mechanism for the effects of PM 2.5?

**Innes:** What has already been published shows no effects, so there is nothing published to support the EPA's position on PM 2.5.

**EIR:** EPA claims the new particulate standards for PM 2.5 will save thousands of lives by preventing deaths due to respiratory disease. What are the main agents responsible for respiratory disease?

**Innes:** Agents responsible for respiratory disease include bacteria, molds, viruses, pollens, pet dust, acidic sulfates, etc. Medical science attributes asthma to a variety of allergens, which cause an allergic reaction which narrows respiratory system passageways. Generally proteins, allergens may be inhaled or swallowed. A recent urban example involved proteins derived from cockroach infestation.

J.D. Spengler, a member of the team responsible for the Harvard study used by EPA to justify the PM 2.5 standard, states that while bronchitis may be associated with particulate matter, asthma is not. Other EPA justification included acidic fogs that occurred in Donora, Pennsylvania, in October 1948, and in London in December 1952. These caused severe respiratory problems and excess deaths during these episodes. Such effects were attributed to acid sulfates. Acidic sulfate particulate is no longer a problem, as it is controlled by reduced sulfate content in fuels and scrubbers to remove them from industrial emissions.

**EIR:** How can the new regulation have any impact on these agents? How can it possibly save any lives?

**Innes:** I can't see how regulations required to meet the proposed standards would save any lives. On the contrary, it would divert funds from measures that would.

**EIR:** What would some of these measures be?

**Innes:** The money could be spent on emergency medical services equipment, or on better hospital equipment.

**EIR:** The main study cited by the EPA, done by Doug Dockery, has not been reviewed, as Dr. Dockery is refusing to release the raw data. He has been quoted as saying that review of his raw data "is an ominous threat to fundamental research." Many scientists have said that Dockery is not releasing the data because re-analysis would undermine his conclusions. What do you think about this tactic, especially in regard to this being an important study cited by the EPA in setting the new particulate standards?

**Innes:** I guess his work isn't very fundamental.

**EIR:** Speaking as a scientist, does the EPA have any good scientific basis for setting the new standards?

**Innes:** No, EPA does not have any good scientific basis for the proposed standards.