

10/31/01

**PROPOSED RESPONSE TO REMAND  
NATIONAL AMBIENT AIR QUALITY STANDARDS FOR OZONE  
“BENEFICIAL” ASPECTS OF GROUND-LEVEL-OZONE**

**TODAY’S ACTION**

- , In this notice, the Environmental Protection Agency (EPA) proposes its response to the U.S. Court of Appeals for the D.C. Circuit (D.C. Circuit Court) remand of the national ambient air quality standards for ground-level ozone with regard to the potential beneficial health effects of ozone.
- , As required by the D.C. Circuit Court, EPA has considered the possible beneficial effects of ground-level ozone pollution in shielding the public from potentially harmful, but naturally occurring, ultraviolet (UV-B) radiation from the sun.
- , In this notice, EPA proposes to respond to the Court’s remand by reaffirming the 8-hour primary ground-level ozone standard promulgated in 1997. The Agency does so after carefully considering the scientific and technical information available for the 1997 review of this national ambient air quality standard.
- , In today’s action, EPA concludes that:
  - the available information is too uncertain to permit credible estimates of the potential beneficial effects of ozone on shielding the public from UV-B radiation;
  - any such beneficial effects would likely be very small from a public health perspective; and
  - the available information does not warrant relaxing the 8-hour ozone standard set in 1997 to protect public health with an adequate margin of safety from the direct adverse effects of breathing ozone in the ambient air.
- , In the 1997 decision to revise the national ambient air quality standards for ground-level ozone, EPA considered information about ozone’s chronic adverse health effects in much the same way that the Agency considered information about the indirect beneficial effects of ground-level ozone in this notice.
  - At the conclusion of the 1997 review, EPA determined that the information about chronic adverse health effects was too uncertain to serve as the basis for establishing an 8-hour ozone standard that would be *more restrictive* than the standard EPA issued.
  - In this notice, EPA concluded that the information on potential indirect beneficial effects is too uncertain and not well enough understood to serve as the basis for establishing a *less restrictive* 8-hour ground-level ozone standard.

- , EPA believes the inability to quantify all related effects does not preclude the Agency from making a decision on setting levels for the national ambient air quality standards, particularly in situations where there is strong quantifiable evidence of significant adverse health effects. Accordingly, it is inappropriate to wait for additional information on such effects prior to responding to this remand.
- , EPA will accept public comment for 60 days following publication of this notice in the Federal Register.

## **BACKGROUND**

- , In 1997 EPA revised the national ambient air quality standards for ground-level ozone, setting it at 0.08 parts per million averaged over an 8-hour time frame.
- , When the U.S. Court of Appeals for the D.C. Circuit remanded the 8-hour ozone standard in May 1999, it instructed EPA to consider several factors, including whether ground -level ozone pollution provides protection against the sun's harmful ultraviolet rays.
- , EPA appealed other aspects of the decision to the Supreme Court but the Agency did not appeal the issue of the potential beneficial effects of ground-level ozone, and therefore was required to respond to the D.C. Circuit Court's remand. Today's action sets forth our proposed response to this issue.
- , EPA's proposed response to the remand is based on:
  - information available for the 1997 review of the national ambient air quality standards on inhalation-related ozone health effects, the adversity of such effects, and human exposure and risk assessments. This information served as the basis for setting the primary 8-hour ozone standard;
  - a review of the scientific information that was available but that was not part of the basis for the 1997 standard. That information focuses on the health effects associated with changes in UV-B radiation (i.e., skin cancer, cataracts, and immune system effects), the association between changes in ground-level ozone and changes in UV-B radiation, and predictions of changes in ground-level ozone concentrations likely to result from attainment of alternative ozone standards; and
  - consideration of the net adverse effects of ground-level ozone, taking into account both the direct adverse inhalation-related health effects and the potential for indirect beneficial health effects associated with the shielding of UV-B radiation.
- , There are a wide range of health effects caused by breathing elevated levels of ozone, including decreased lung function (primarily in children active outdoors), increased respiratory symptoms (particularly in highly sensitive individuals), increased hospital admissions and emergency room visits

for respiratory causes (among children and adults with pre-existing respiratory disease such as asthma), inflammation of the lungs, and possible long-term damage to the lungs.

, While some degree of exposure to solar radiation is generally beneficial to health, excessive exposure to UV-B radiation can adversely affect the skin, eyes and the immune system. Long-term exposure to UV-B radiation has been associated with the development of skin cancer and some types of cataracts. The effects of exposure to UV-B radiation on the immune system are not as well understood.

- In general, the amount of damage to these systems depends on the duration and/or pattern of exposure at particular locations, the time of day and the time of year. Individual behaviors, such as “sun avoidance” (using clothing, sunscreens and sunglasses to shield from solar radiation) or “sun seeking” (sunbathing), strongly affect the amount of damage likely to occur. For non-melanoma skin cancer, the effects of excessive exposure to UV-B radiation are also affected by an individual’s skin characteristics.

, In proposing to respond to the remand by reaffirming the 1997 primary ozone standard at this time, EPA recognizes that information on indirect potentially beneficial health effects of ground-level ozone is now available that was not part of the original rulemaking record. EPA’s Office of Research & Development has initiated the next periodic review of the ozone national ambient air quality standards with a recent Federal Register call for information. To ensure that the next review of the ozone criteria and standards can be based on an up-to-date body of relevant scientific information, the Agency encourages the public to submit comments and new scientific information on:

- relationships between ground-level ozone, UV-B radiation, and human exposures;
- factors EPA identified as being important in doing an area-specific quantitative exposure and risk assessments of the potential UV-B effects; and
- public policy factors that may warrant a fuller examination in the next review of the standard.

## **FOR MORE INFORMATION**

, Interested parties can download the proposed response from EPA's web site on the Internet under recent actions at the following address: (<http://www.epa.gov/ttn/oarpg>).

, For further information about the proposed response, contact Ms. Susan Stone of EPA's Office of Air Quality Planning and Standards at (919) 541-1146.