

disturbing the population stability or residential or work communities. The "adverse" level is one at which eye irritation occurs. Also in this category are levels of pollutants that lead to costly and undesirable effects other than those on humans. These include damage to vegetation, reduction in visibility, or property damage of sufficient magnitude to constitute a significant economic or social burden.

II. "Serious" Level. Levels of pollutants, or possible combination of pollutants, likely to lead to insidious or chronic disease or to significant alteration of important physiological function in a sensitive group, define the "serious" level. Such an impairment of function implies a health risk for persons constituting such a sensitive group, but not necessarily for persons in good health.

III. "Emergency" Level. Levels of pollutants, or combination of pollutants, and meteorological factors likely to lead to acute sickness or death for a sensitive group of people, define the "emergency" level.

"The net effect of air pollutants depends on a number of modifying factors. It cannot be predicated reliably from the mere specification of a concentration of a pollutant at one place at one time. It is known that particle size may modify the toxicity of inhaled toxic substances; moreover, the mere presence of particles, whether or not in themselves toxic, may strongly intensify the irritant action of gases such as sulfur dioxide. In some cases, present knowledge was sufficient to take some of these factors into account in setting standards. In others, more information will be required before standards can be set.

It was necessary in some instances to use indirect indicators in order to specify pollutant levels. For example, reliable analytical methods have been widely used to measure levels of "oxidant." Data from such measurements provide useful correlations with eye irritation, visibility and crop damage, despite the fact that "oxidant" does not directly measure the specific substances that produce these effects. Until the specific substances have been identified and adequate procedures for their measurement developed, "oxidant index" will be used to define these effects at the adverse level. In the future it may be practical to utilize a biological indicator of air pollution.

Standards set for single pollutants alone are not necessarily applicable to combinations of pollutants, nor to physiological effects under unusual weather conditions, or to pollutants occurring in aerosol form or when in combination with aerosols. These factors may complicate the effects of single pollutants. In addition several pollutants may have similar effects. For these reasons no single level of a given pollutant ordinarily without effect at that level should be interpreted as a guarantee that levels below that point are safe or free from effect.

The standards of air quality are not intended to provide a sharp dividing line between air of satisfactory quality and air of unsatisfactory quality. The numbers represent the approximate levels at which certain definite effects begin to occur. It follows that pollution levels below those shown in the standards should not ordinarily produce the stipulated effects defined at each level.

In addition to the above matters, the following technical factors were also considered in setting standards: (1) methods of measurement of the pollutant, (2) criteria for selection of the most susceptible group in the community, and (3) time of exposure to the pollutant.

Two time-periods were considered: a time-weighted hourly average and an average for an eight-hour period. Concentrations and time periods given in the table refer only to levels for which data are felt to be reliable and suitable for application without excessive assumptions. The footnotes to the table indicate the substances which need additional data before they can be entered in the table of standards.

The entry, "Not Applicable", indicates that under conditions of community air pollution it is extremely unlikely that the defined effects occur.

It is the intent of the Department to adopt standards for additional substances in the future.

The values entered here are determined on a substantially different basis than the industrial exposure standards. These values are, therefore, not appropriate for application in industrial hygiene.

The bases upon which standards are set are indicated by items enclosed with parentheses.

The Department will interpret these standards to those agencies responsible for air pollution control. In interpreting these standards, the sites and conditions of air sampling should be so chosen as to realistically represent the exposures of persons and property which might be affected.