

## Understanding Air Pollution and Regulated Pollutants

### National Ambient Air Quality Standards (NAAQS)

The federal Clean Air Act and companion regulations set limits for the levels of six common air-borne pollutants. These limits are called National Ambient Air Quality Standards (NAAQS). The six pollutants are called criteria pollutants. There are two sets of limits. The primary standard sets limits so that human health can be protected; the secondary standard sets limits that prevent environmental damage and property damage.

### Criteria Pollutants

The six common pollutants that are given National Ambient Air Quality Standards are:

- Ozone
- Lead
- Nitrogen Oxides
- Sulfur Dioxide
- Particulate Matter – PM2.5 and PM10
- Carbon Monoxide



### Hazardous Air Pollutants

Hazardous air pollutants (HAP) are toxic chemicals that are known or suspected to cause cancer, to cause serious health effects, or to cause adverse environmental effects. The federal Environmental Protection Agency has identified the hazardous air pollutants. For a complete list, see [www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications](http://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications). The Clean Air Act requires that the Environmental Protection Agency (EPA) and the Iowa Department of Natural Resources (DNR) reduce exposure to hazardous air pollutants. To support that requirement, the EPA has set several standards, called National Emission Standards for Hazardous Air Pollutants (NESHAP). The standards include such topics as metal fabrication and finishing, plating and polishing and reciprocating internal combustion engines.

It is the responsibility of the Iowa DNR to ensure that the hazardous air pollutants are reduced.

### Greenhouse Gases

Iowa law requires that power plants must make estimates of greenhouse gas emissions in their prevention of significant deterioration (PSD) permit applications. Beginning on January 2, 2011, the EPA began requiring that any applicant for a PSD permit must use the best available control technology to control greenhouse gas emissions.

The chemicals considered greenhouse gases are

- Carbon dioxide
- Methane
- Nitrous oxide
- Hydrofluorocarbons
- Perfluorocarbons
- Sulfur hexafluoride

Furthermore, Iowa law required the Iowa DNR to establish a system for mandatory reporting of greenhouse gas emissions by all businesses that emit greenhouse gases. That system is called the Green House Gas Inventory.

### **Nonattainment**

When monitors detect that the outdoor air pollution levels for a criteria pollutant have been exceeded, federal regulations require that the area around the monitor be labeled as a nonattainment area and that measures must be undertaken to reduce the air-borne levels of the pollutant.

The Iowa DNR will identify the source of the pollutant, work with the source to ensure that the levels of the pollutant reduced, and will monitor the air quality for further exceedences. The Iowa DNR must work closely with the federal EPA in getting the nonattainment issues resolved.

Although economic development staffs sometimes claim that being in nonattainment stops new economic development in a region, in reality it only means that the new permittees must install appropriate technology so that the pollutant levels are brought back into and remain in attainment and must offset the amount of pollutant planned to be discharged. The pollution control technology does cost a company money to install and operate. However, that alone does not stop economic development.

The Iowa DNR cannot deny a new source of a criteria pollutant when an area is in nonattainment.

### **Control Technology**

Industries that will be releasing pollutants into the air must request a permit from the Iowa DNR.

When an area is in attainment, the permit is called a prevention of significant deterioration (PSD) permit. The permit will require control technology to be implemented. The guidelines for determining the technology and selecting the technology have been set by the EPA.



For criteria pollutants, the best available control technology (BACT) is required. In determining the BACT, the Iowa DNR will review the technology available, look at the technology used in other places or applications and require the permit requestor to select the best of the solutions.

For hazardous air pollutants, the maximum available control technology (MACT) is required. In determining the MACT, the Iowa DNR will review the technology available, look at the technology used in other places or applications and require the permit requestor to select the solution that provides the maximum control in order to minimize the release of the pollutant.

For areas in nonattainment for a particular pollutant, the construction permit is called a nonattainment area permit. The requestor must implement technology that provides the lowest achievable emissions rate (LAER). This technology is the best technology to get the lowest emission rate. They also must offset their new emissions by installing technology to reduce the emissions of that pollutant in another portion of their facility or must pay to have reduction technology placed on another business in the nonattainment area.

### **Role of the DNR**

The Iowa DNR is responsible for issuing permits to industry so that air-borne levels of the pollutants are not exceeded, to monitor the air quality across the state and to enforce compliance with permits.

The federal law requires that the Iowa air quality rules must be as least as stringent as the federal law. However, Iowa law has an anti-stringency clause that requires that the Iowa DNR must implement air quality rules that are no more stringent than the federal law.

## Sources

For information on the criteria air pollutants, see [www.epa.gov/criteria-air-pollutants](http://www.epa.gov/criteria-air-pollutants)

For information on the hazardous air pollutants, see [www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications](http://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications) and [www.epa.gov/haps](http://www.epa.gov/haps)

For information on the National Emission Standards for Hazardous Air Pollutants standards, see [www.iowadnr.gov/air/prof/NESHAP](http://www.iowadnr.gov/air/prof/NESHAP)

For information on greenhouse gases, see [www.iowadnr.gov/air/prof/ghg/ghg.html](http://www.iowadnr.gov/air/prof/ghg/ghg.html)

For the state regulation of greenhouse gases, see Iowa Code 455B.131.

“Iowa Climate Change Advisory Council Full Report,” December 23, 2008, can be found at <http://www.iowadnr.gov/Environment/ClimateChange/ClimateChangeAdvisoryCo.aspx>.

Midwest Governors Association, “Midwestern Energy Security and Climate Stewardship Roadmap 2009

Perry Beeman, “Tighter Limits Increase Air Pollution Violations in Iowa,” *The Des Moines Register*, April 29, 2011