



The Clean Air Act (CAA)

Objectives



Terminal Objective

Given the Environmental Laws and Regulations course manual as a reference, you will be able to:

- **Describe the objectives of the Clean Air Act (CAA) and how the 1990 amendments affect the DOE.**

Objectives



Enabling Objectives

- **Describe the sections of the CAA that are most relevant to the DOE.**
- **Outline the laws that led to the 1990 CAA amendments.**
- **List the major elements of the 1990 CAA amendments that are applicable to the DOE.**

Objectives



Enabling Objectives (continued)

- **Describe the programs established to regulate under the CAA.**
- **List the EPA's regulatory framework of four CAA implementation mechanisms.**
- **Specify how other Federal laws integrate with the CAA.**

Overview



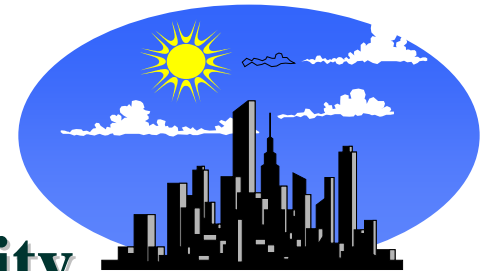
The Clean Air Act (CAA) is the major Federal law regulating the air emissions of the DOE's processes and facilities.

The goal of the CAA was to set and achieve National Ambient Air Quality Standards (NAAQS) in every state by 1975

Overview

The objectives of the CAA are to:

- **Protect and enhance the quality of national air resources**
- **Protect public health and welfare while fostering a beneficial productive capacity**



History of Air Pollution Control

Current air pollution laws are based on:

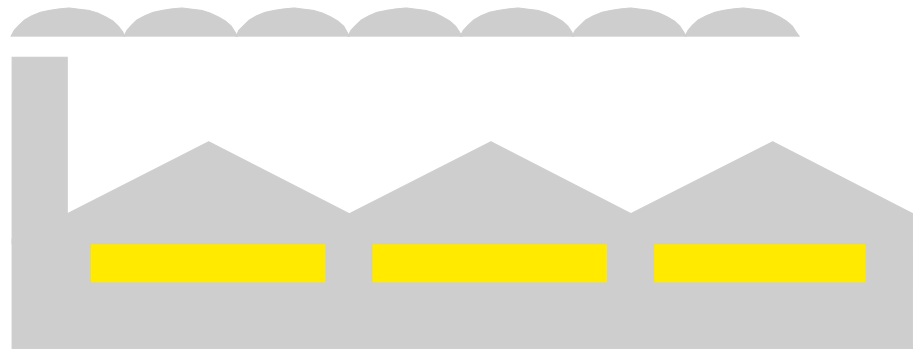
- **Air Pollution Control Act of 1955**
- **Clean Air Act of 1963 (as amended)**
- **Air Quality Act of 1967**
- **Significant amendments in 1970, 1977, and 1990**



Air Pollution Control Act of 1955

This law specifically states that:

“the prevention and control of air pollution at its source is the primary responsibility of State and local governments.”



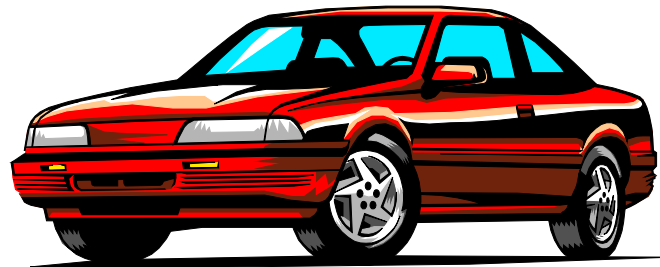
Clean Air Act of 1963

The Department of Health, Education, and Welfare (HEW) was authorized to establish nonmandatory air quality criteria. The law was almost exclusively concerned with stationary sources.



Clean Air Act of 1963

- **Under certain conditions the HEW could intervene, without request, in the pollution problems of a State**
- **Amendments authorized the prescription of “practicable emission standards” for motor vehicles**



Air Quality Act of 1967



The Act was Congress's first attempt at a comprehensive regulatory scheme for air pollution, which included:

- **The establishment of atmospheric areas and air quality control regions**
- **The issuance of “air quality criterion” and “control techniques” reports**

Air Quality Act of 1967

- **The adoption of ambient air standards by States within air quality regions**
- **The development of plans by the States to implement the ambient air standards**



CAA Amendments



The Clean Air Act of 1963 was amended in:

- **1970, which redefined the State and Federal roles in the control of the Nation's air quality**
- **1977, which imposed significant regulatory requirements on new sources in areas where air quality was cleaner than NAAQs**

Current Law

- **DOE must meet EPA's CAA objectives and criteria for Federal air quality**
- **State and local programs (if approved by EPA) may administer the CAA**
- **State and local requirements may be more strict than EPA requirements**

Current Law



EPA is exempt from NEPA when taking regulatory action under the CAA based on “functional equivalence” between EPA actions to carry out environmental protection requirements and NEPA requirements

Current Law

The 1990 amendments had a number of significant impacts. The new law:

- **Strengthened measures for attaining air quality standards (Title I)**
- **Established tighter emission standards for vehicles and fuel (Title II)**



Current Law



Public Participation is a very important part of the 1990 Clean Air Act.

Opportunities include:

- **Participating in public hearings**
- **Suing the government or a source's owner or operator**
- **Requesting action by EPA or the state against violators**

Current Law



The 1990 Amendments created features to let businesses make choices on the best way to reach pollution cleanup goals.

- **Example - the acid rain cleanup program includes pollution allowances that can be traded, bought and sold.**

Current Law



The 1990 Amendments also provides economic incentives

- **Example - gasoline refiners can get credits for producing cleaner gasoline than required and they use those credits when their gasoline doesn't achieve cleanup requirements.**

Title I - Air Quality and Emission Limitations

National Ambient Air Quality Standards

- **Primary standards specify concentration levels intended to protect public health**
- **Secondary standards are intended to protect “public welfare”**
 - **Soils**
 - **Vegetation**
 - **Wildlife**



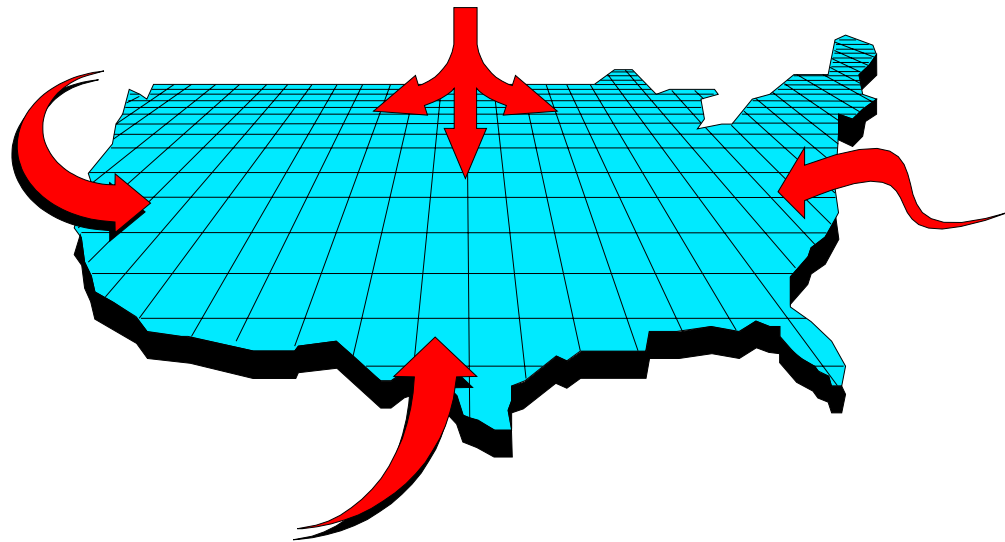
Title I - Air Quality and Emission Limitations



- **EPA anticipated that meeting primary standards would also automatically meet secondary standards**
- **However, sulfur dioxide (acid rain precursor) is more damaging to vegetation than to animals or humans**

Title I - Air Quality and Emission Limitations

The EPA established geographic regions to designate the air quality status with respect to NAAQSs. These regions are pollutant specific.



Title I - Air Quality and Emission Limitations

Title I addresses nonattainment areas (NAAs) for:

- **Sulfur dioxide**
- **Nitrogen dioxide**
- **Carbon monoxide**
- **Ozone**
- **Lead**
- **Particulate matter (PM-10)**



Title I - Air Quality and Emission Limitations



In 1992, EPA revised the definition for major stationary sources in NAAs to set thresholds for new sources based on the severity of the area's air pollution

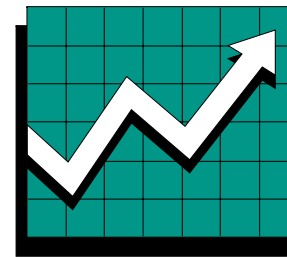
State Implementation Plans (SIPs)

- **The CAA requires States to adopt SIPs**
- **SIPs set emission limits and reduction measures for the specific sources in that State**



State Implementation Plans (SIPs)

- **Include an emissions inventory of all existing sources that emit any regulated pollutant**
- **Establish a mix of emission limits and other measures to control each criteria pollutant**
- **Contain permit programs required under the CAA**



New Source Performance Standards (NSPS) Program

The NSPS Program is a nationally uniform emissions standard program developed by category of industrial sources and encompasses “new sources” only. This includes stationary sources constructed or significantly modified after enactment of the regulation.



New Source Performance Standards (NSPS) Program

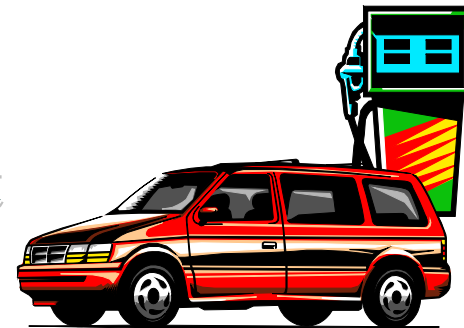
- **The NSPSs set minimum nationwide emission limitations on classes of facilities**
- **The NSPSs must take into account:**
 - **Cost of achieving emissions reductions**
 - **Best demonstrated technology**



Title II - Mobile Sources

Title II reduces air pollution from mobile sources by:

- **Stricter emission standards for mobile sources**
- **Stricter standards on gasoline and diesel fuel to reduce emissions**
- **Programs to encourage and force the development of “clean” fuel vehicles**



Title III - Hazardous Air Pollutants



The 1990 Amendments:

- **Increased the number of Hazardous Air Pollutants (HAPs) from 8 to 188**
- **HAP standards were changed from health-based to technology-based**

Title III - Hazardous Air Pollutants

- **Regulatory shift from health-based, substance-specific standards to technology-oriented, performance-based standards**
- **Applicable to categories of emission sources rather than to specific pollutants emitted**



National Emission Standards for Hazardous Air Pollutants

NESHAPs are nationally uniform standards established to control pollutants that may result in:

- **An increase in mortality**
- **An increase in serious irreversible or incapacitating, but reversible, illness**



Title III - Hazardous Air Pollutants

Sources of HAPs:

- “Major sources”
- “Area sources”



Title III-Hazardous Air Pollutants

The CAA set requirements for obtaining preconstruction permits for major stationary facilities or operations to ensure that any listed HAP emissions comply with the NESHAPs (Section 112).



Title III - Hazardous Air Pollutants

Emission standards must require “maximum achievable control technology” (MACT) to be used for both new and some existing sources.



Title III - Hazardous Air Pollutants

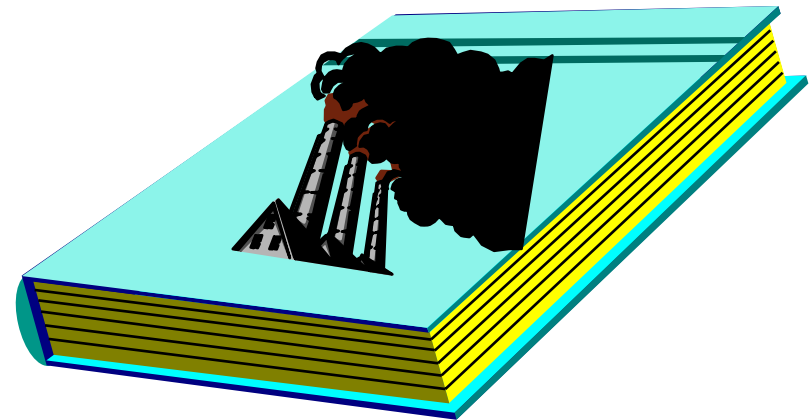
Measures to implement MACT include:

- **Pollution controls**
- **Process changes**
- **Materials substitution**
- **Operator training and**



Risk Management Program

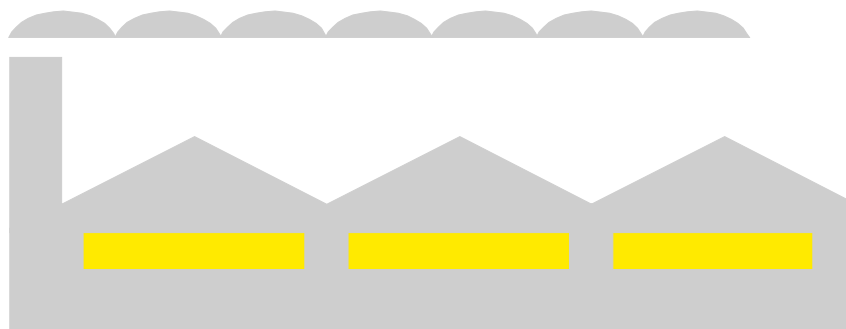
All stationary sources must prepare a Risk Management Plan if they have more than a threshold quantity of a listed regulated substance in a single process.



Title IV - Acid Rain Control

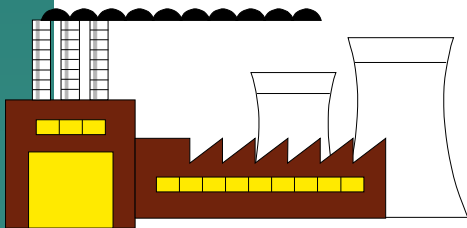
Title IV establishes specific requirements for reducing:

- **Sulfur dioxide emissions**
- **Nitrogen oxides**



Title IV - Acid Rain Control

- **Establishes a new market-based system**
- **Allocates “emission allowances” to power plants**
- **Requirements for compliance include:**
 - **Reduce emissions, or**
 - **Acquire allowances from other plants**



Title V - Operating Permits

Each permit must include:

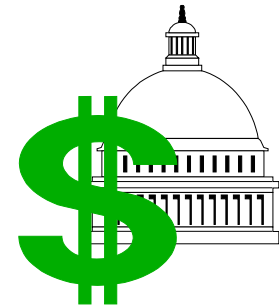
- **Enforceable emission limitations and standards**
- **Schedule of compliance**
- **Requirements for submission of monitoring data**



Title V - Operating Permits

Title V

- **Establishes an expanded permitting program.**
- **New permit program is fee-based**
- **Federal facilities are subject to any fee or charge imposed by the State or local agency to defray the costs of its regulatory pollutant**



Title VI - Stratospheric Ozone Protection

Title VI requires:

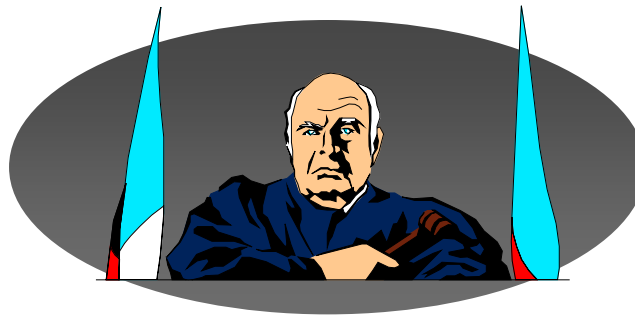
- **Complete phaseout of chlorofluorocarbons and halons**
- **Reduction in use and emissions of other ozone-depleting substances**
- **Prohibition of knowingly venting refrigerants**



Enforcement Provisions

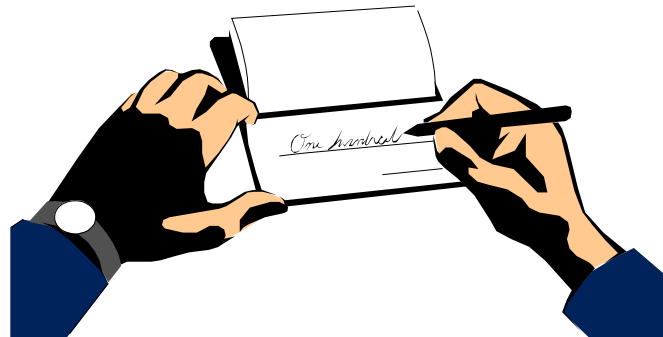
Expanded CAA enforcement provisions include:

- **New criminal sanctions for intentional violations**
- **Administrative penalty mechanisms**



Enforcement Provisions

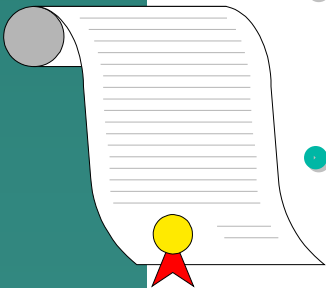
Fines and prison sentences can now be imposed upon a negligent party. More severe penalties apply to parties who “intentionally” release HAPs, with sentences of up to 15 years in prison.



CAA and Other Laws

The CAA interrelates with many other Federal laws, including:

- **Resource Conservation and Recovery Act**
- **Comprehensive Environmental Response, Compensation, and Liability Act**
- **Emergency Planning and Community Right-to-Know Act**
- **Occupational Safety and Health Act**



DOE and the CAA

Examples of where DOE must meet CAA requirements include:

- **Coal-fired power plants**
- **Small furnace, kiln, boiler, and ventilation stacks**
- **Lab vents**
- **Paint booths**
- **Hazardous waste incinerators**



DOE and the CAA



A CAA permit may be required for the following Environmental Restoration activities:

- **Soils removal**
- **Ground water pump and treat**
- **Building decommissioning**

Review Question

Select the item that describes the objectives of the Clean Air Act.

- a. To regulate the air emissions of DOE sites and facilities.**
- b. To foster a sense of responsibility for the environment and the air we breathe.**

Review Question

Select the item that describes the objectives of the Clean Air Act. (cont.)

- c. To protect and enhance the quality of National air resources and to protect public health and welfare while fostering a beneficial National productive capacity.**
- d. To clean the Nation's air and assist in reducing additional pollution through strict controls over all locations contributing airborne pollutants.**