The Clean Air Act

History, Overview and Structure

James “Skip” Spensley
Spensley & Associates

The Caveman

Mummified bodies from the Paleolithic era

Ancient Rome

SMOG

1306 King Edward I

1873 London 268 deaths

1909 Glasgow 1,000 deaths

1952 London

United States

1881 Chicago & Cincinnati

Late 1940's in L.A.

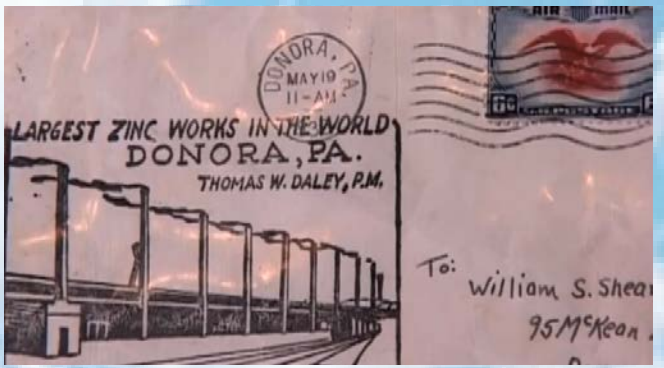
1928 New York City

1939 St. Louis

1970 Denver

Donora, Pennsylvania

Donora 20 deaths



Our Federal System of Laws

- Apply nationally
- Supremacy over state & local laws
- Empowers and funds state & local authorities
- Limitations on federal power:
  - Federalism
  - Due Process
  - Equal Protection
  - Prohibition on Takings
  - Administrative Procedures Act

Role of Federal Government

Legislative Branch

Enacts the Laws

Makes overall policy

Executive Branch

Promulgates the regulations

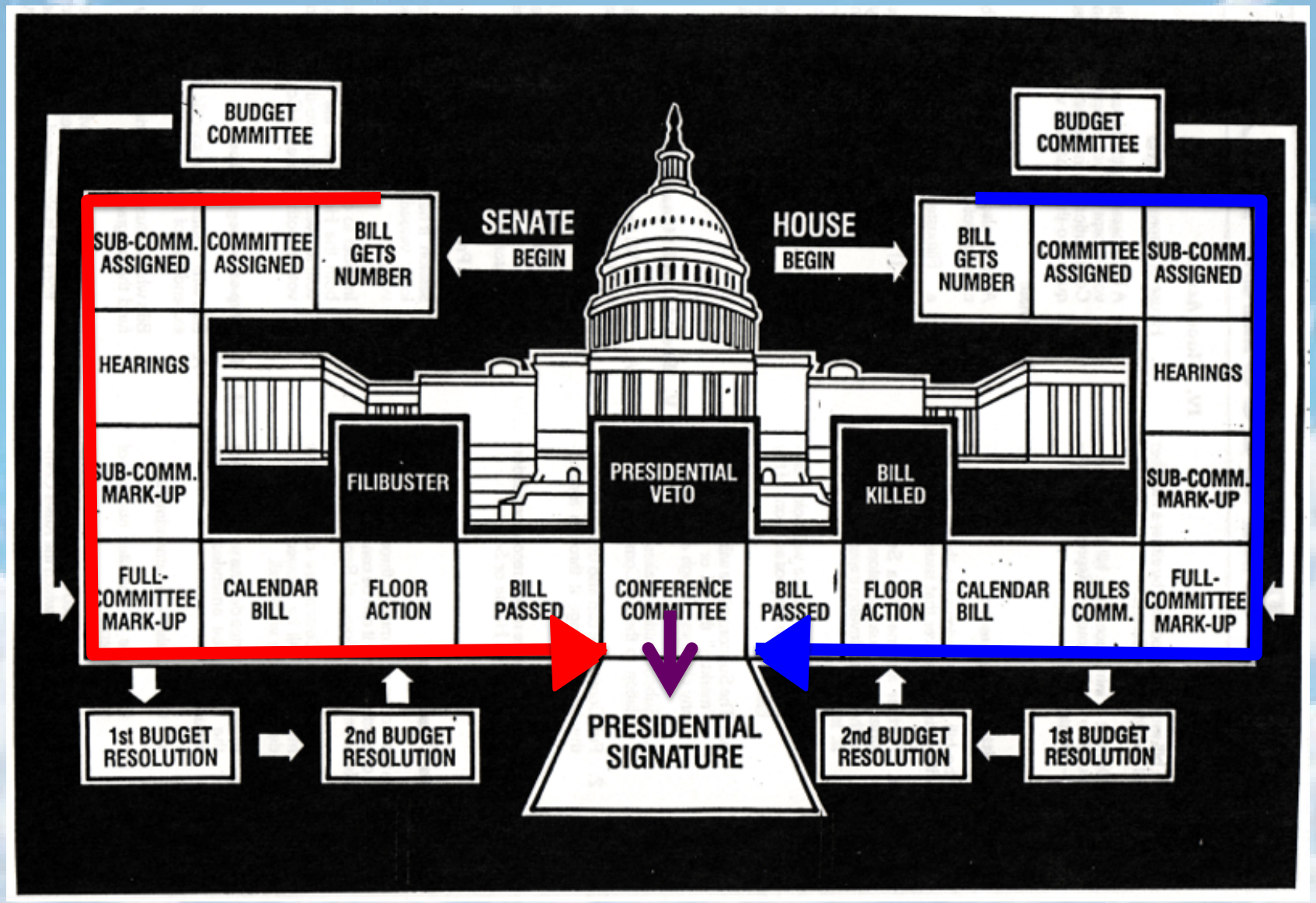
Makes program policy

Judicial Branch

Interprets the law & regulations

Tailors policy to specific cases

Legislative Branch: U.S. Congress



Congressional Committees

Environmental Responsibilities

U.S. House of Representatives

Agriculture Committee	Commerce Committee	Science Committee
FIFRA, Biofuels	CAA, TSCA, NEPA	Environmental R&D
Ways & Means Committee	**Natural Res. Committee**	**Public Works Committee**
Environmental Tax incentives	ESA, F&WCA	CWA, 1899 Refuse Act

U.S. Senate

Agriculture Committee	Environment Committee	Science Committee
FIFRA, Biofuels, Pesticides	CAA, TSCA, NEPA, RCRA, CERCLA, SDWA	Environmental R&D

Legislative Processing

- Bill passed by Congress
- Reported in the *Congressional Record*
- Signed by President
- Reported as
  - Statutes-at-Large e.g. 83 Stat. 852 (1969)
  - Public Law e.g. P.L. 91-190
  - Slip laws
- *United States Code* e.g. 42 U.S.C. § 4321 et seq

Executive Branch Implementing
Writing Regulations

Administrative Procedures Act governs

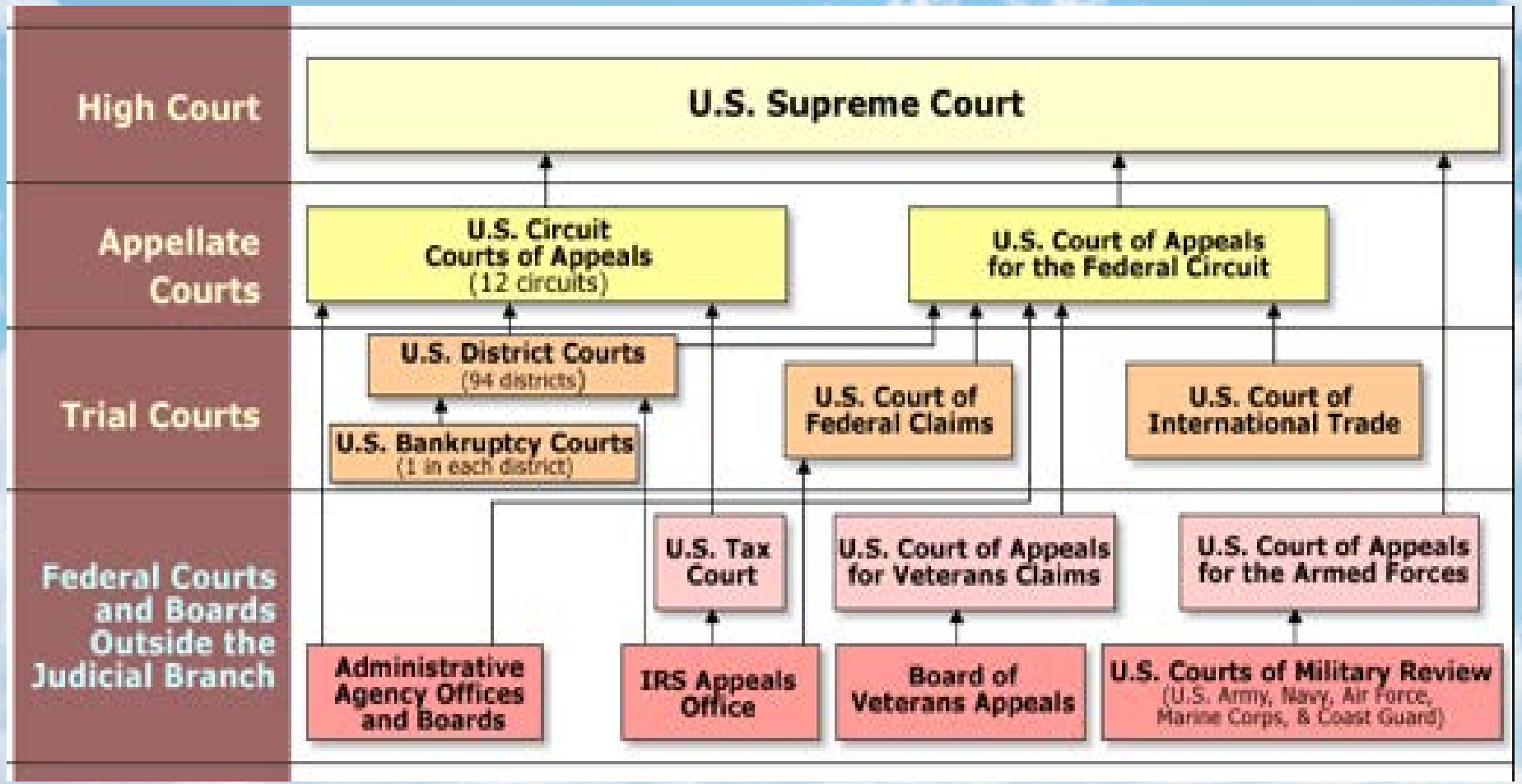
- Agency proposal as draft regulation
- Notice published in the *Federal Register*
- Comments requested and received
- Final regulation published in *FR*
- Reported in *Code of Federal Regulations*
  e.g. 40 C.F.R. §1500 et seq.

Executive Branch

Environmental Responsibilities

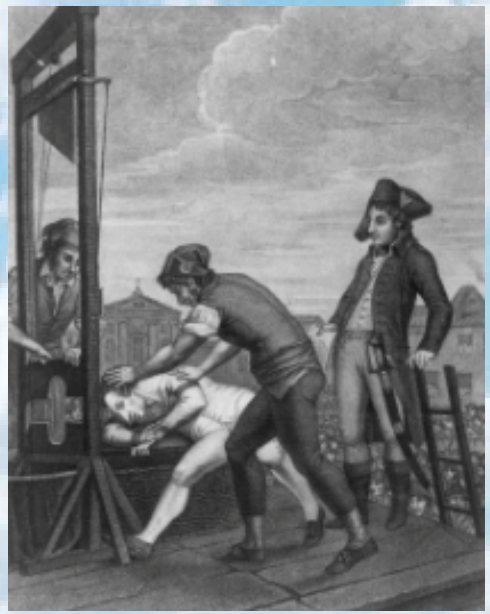
- President
  - White House Office — Overall Policy
  - Council on Environmental Quality — Environmental Policy
  - Office of Management and Budget — Environmental Budget
  - Department of Health — Health policy
  - Environmental Protection Agency — CAA, CWA, RCRA, CERCLA, TSCA
  - Department of Justice — Environmental Litigation
  - Department of Interior — ESA, F&WCA
  - Department of State — Environmental treaties
  - Department of Commerce — ESA, MMPA
  - Department of Agriculture — FIFRA
  - Department of Defense — CWA - COE
  - Department of Energy — Nuclear mat'ls

Judicial Branch (Federal)



Early Responses to Air Pollution

- **Avoidance** – zoning of industrial properties
- **Nuisance lawsuits**
  - Private
  - Public
- **Award of damages or injunctions**
- **Local/State control laws & fines**
- **DEATH by order of the KING**

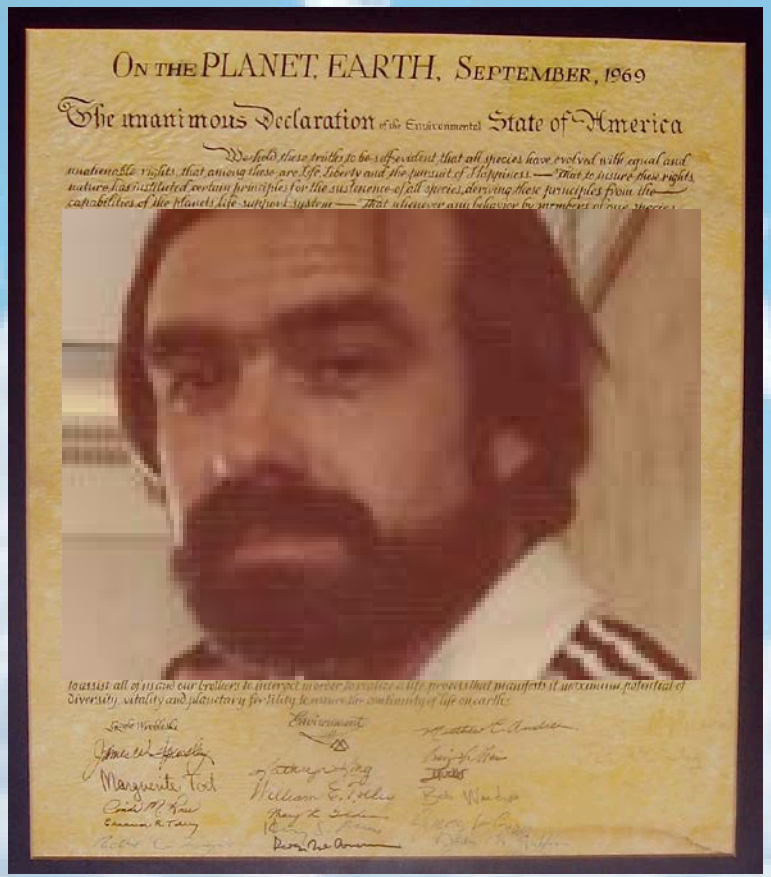


Earth Day 1970


The New York Times

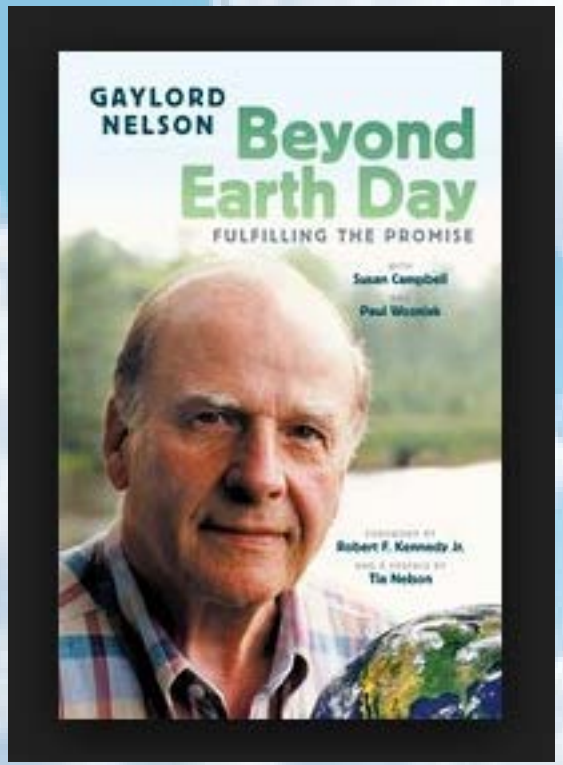
NEW YORK, THURSDAY, APRIL 22, 1970

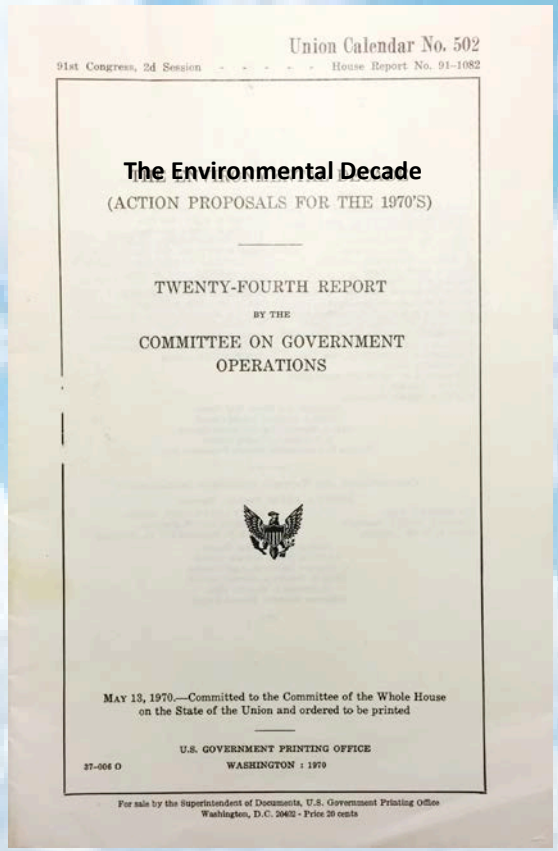
Millions Join Earth Day Observances Across the Nation


On the PLANET EARTH, September, 1969

The unanimous Declaration of the Environmental State of America

Congressional Attention





Union Calendar No. 502

91st Congress, 2d Session · · · · · · House Report No. 91-1082

The Environmental Decade

(ACTION PROPOSALS FOR THE 1970'S)

TWENTY-FOURTH REPORT

BY THE

COMMITTEE ON GOVERNMENT OPERATIONS

MAY 13, 1970.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

U.S. GOVERNMENT PRINTING OFFICE

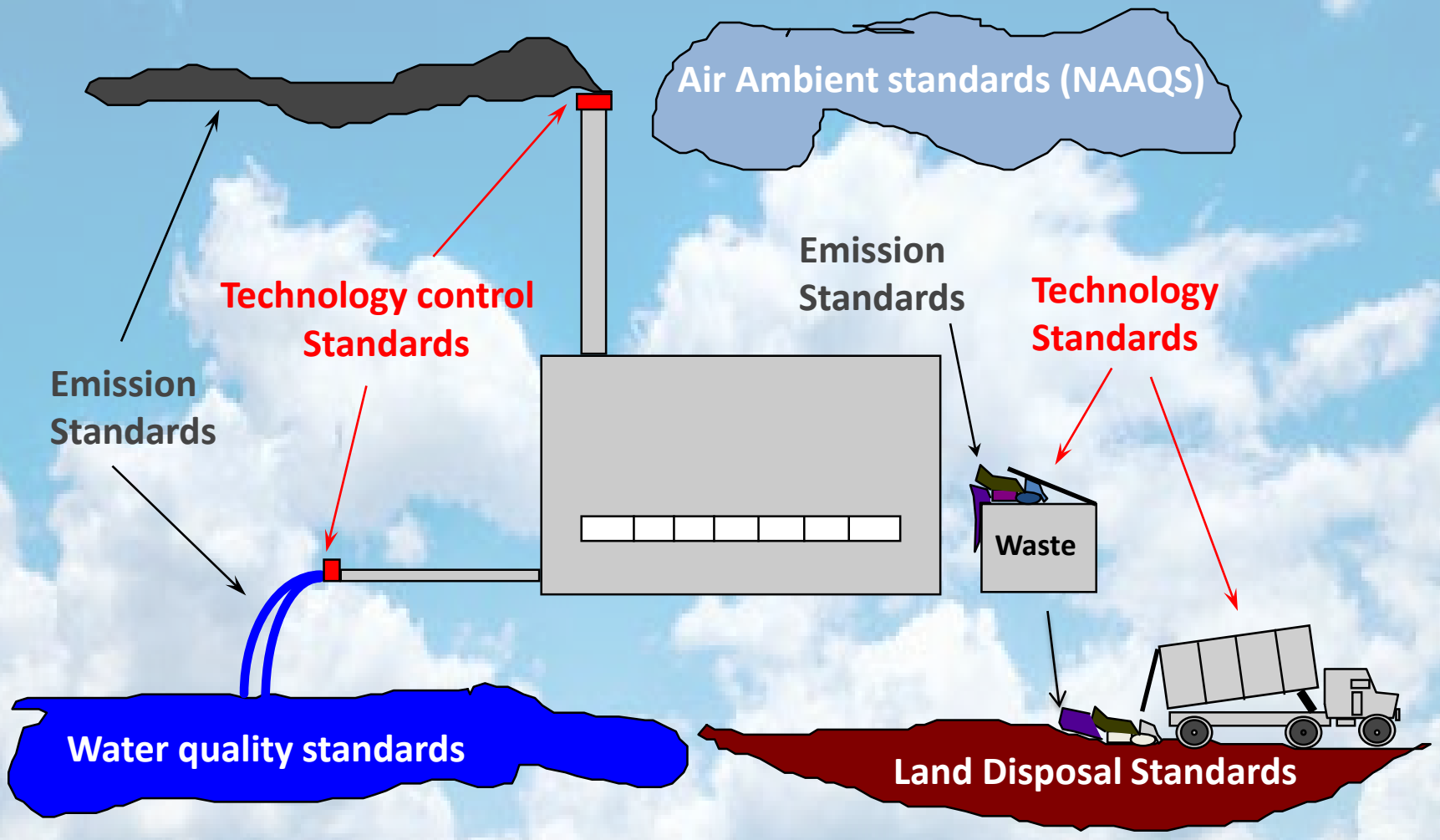
37-006 O WASHINGTON : 1970

For sale by the Superintendent of Documents, U.S. Government Printing Office Washington, D.C. 20402 - Price 20 cents

Clean Air Act

- **Most complex environmental statute**
  - Relies upon the scientific understanding of the causes and effects of air pollution.
  - Melds past state attempts and different legal approaches of 50 states to controlling air pollution.
  - Depends upon cooperation among all levels of government and among the states.
  - Doesn't conform to governmental boundaries.
  - Relies on continuously changing technology.

3 kinds of Environmental Standards



Federal Legislation[1]

- 1955 – Air Pollution Control Act
- 1960 – Motor Vehicle Exhaust Study Act
- 1963 – The Clean Air Act of 1963
- 1965 – Motor Vehicle Air Pollution Control Act
- 1967 – The Air Quality Act
- 1970 – The Clean Air Act Amendments 1970
- 1977 – The Clean Air Act Amendments 1977
- 1990 – The Clean Air Act Amendments 1990

[1] *History of Air Pollution Legislation in the United States*, Arthur C. Stern

Clean Air Act Context

- **Creation of Environmental Protection Agency**
  - By Reorganization Plan #3 proposed by President Nixon
  - Consolidated three federal departments
    - Interior, HEW and FDA
- **Philosophy of early environmental legislation**
  - Shift from resources protection to "Environmentalism"
  - Relied on Command & Control, not market forces
  - Use of "health-based" ambient standards
- **Federal Government role v. State Responsibilities**
  - Fed set standards, specified requirements and policies
  - Required States to develop the plan (SIP) to achieve

CAA Structure

- **TITLE I - PROGRAMS AND ACTIVITIES**
  - **Part A: Air Quality and Emission Limitations**
    - **Section 107 - Air Quality Control Regions**
    - **Section 108 - Air Quality Criteria & Control**
    - **Section 109 - Ambient Air Quality Standards**
    - **Section 110 - State Implementation Plans**
    - **Section 111 - Stationary Source Standards**
    - **Section 112 - Hazardous Air Pollutants**
    - **Section 113 - Federal Enforcement**
- **TITLE II - Mobile Source Standards**
- **TITLE III – General Provisions**
- **TITLE IV – Acid Deposition Control**
- **TITLE V - Operating Permits**
- **TITLE VI – Stratospheric Ozone**

President Nixon signing CAA

CAA Pollutants

CRITERIA POLLUTANTS

Attainment	Non-attainment

Existing Sources

RACT | RACT

New Major Sources / Major Modifications

BACT | LAER

Control Technology Requirements

HAZARDOUS AIR POLLUTANTS

NESHAPS (40 C.F.R. Part 61)

Arsenic	Asbestos
Benzene	Beryllium
Coke Ovens	Mercury
Vinyl Chloride	Radionuclides

189 HAPs from 1990 Amendments

Source categories listed

MACT standards promulgated

Residual risk study 1×10^{-6}

Criteria Pollutants

Commonly found air pollutants

- Sulfur Oxides (SO_2)
- Particulate Matter ($PM_{10,}$ $PM_{2.5}$)
- Carbon Monoxide (CO)
- Ozone (Photochemical Oxidants)
- Nitrogen Dioxide (NO_x)
- Lead

Setting Ambient Standards

- EPA & States established 247 Air Quality Control Regions based on State boundaries and air basins
- EPA provided Air Quality Criteria for Major Pollutants and Control Technology Information
- EPA adopts National Ambient Air Quality Standards (NAAQS)
- States prepare State Implementation Plans (SIPs) to achieve NAAQS
- EPA reviews and revises State Implementation Plans (SIPs) – can adopt a Federal Plan if needed
- EPA oversees and States enforce SIPs

SIP Content Requirements

- Achieve attainment of NAAQS by deadline
- Establish enforceable Emission Limitations, Schedules of Compliance and other Controls
- Set Monitoring and Reporting Requirements
- Enforcement, Permit Programs, Preconstruction Review and Operational Controls
- Ensure Non-interference with other State Plans
- Provide Adequate Administrative Resources
- Implement Motor Vehicle Inspections and Testing
- Intergovernmental Consultation & Public Notification
- Schedule for Periodic Revisions
- Collect permit Fees

SIP Compliance Strategies

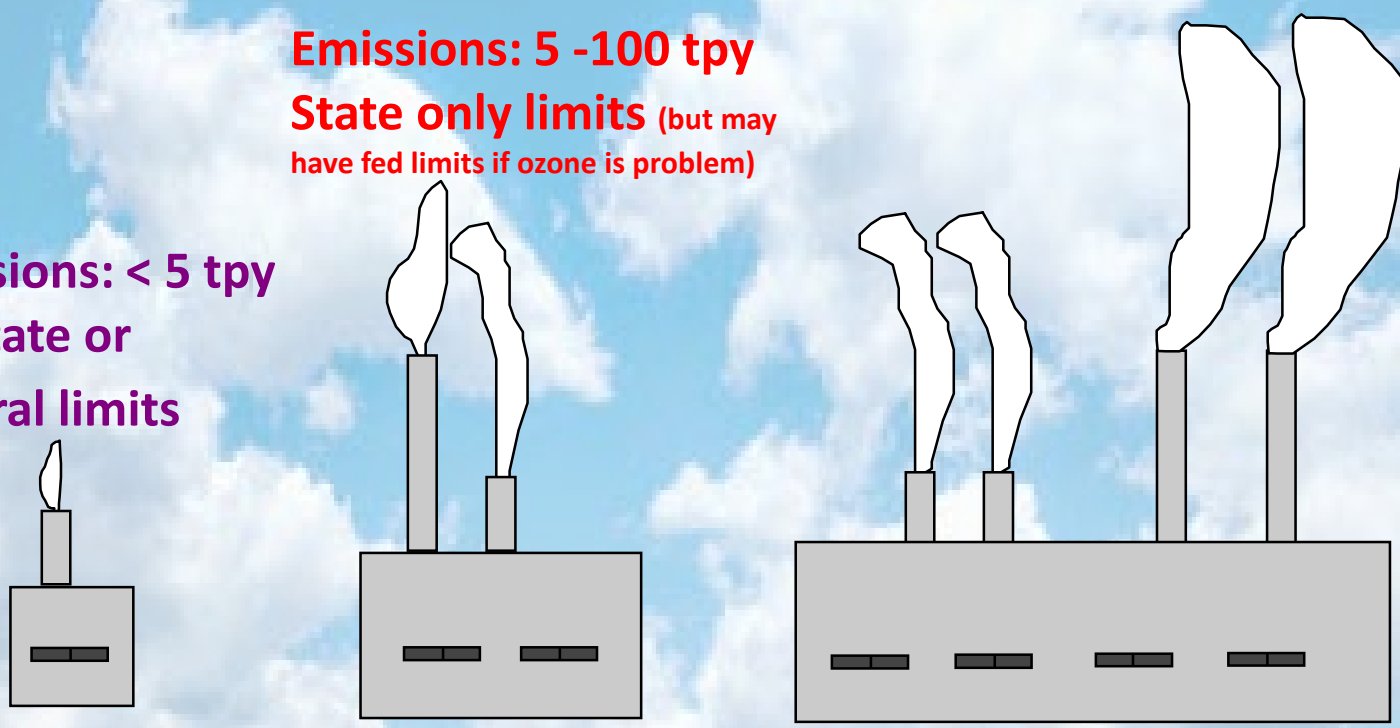
- Permits and Preconstruction Review
- Stationary Source Limitations
- Vehicle Emission Limitations and Inspections
- Local Transportation Controls (RAQC reports)
- Indirect Source Regulation (State only)
- Sanding and Sweeping Programs
- Area source limitations and incentives

CAA Applicability

Emissions: > 100 tpy
Federal CAA and State limits

Emissions: 5 -100 tpy
State only limits (but may have fed limits if ozone is problem)

Emissions: < 5 tpy
No State or
Federal limits



Tpy: Tons per year

Technology Control Requirements

	ATTAINMENT AREA	NONATTAINMENT AREA
EXISTING SOURCES	**RACT** (Reasonably Available Control Technology)	**RACT**
NEW SOURCES	**BACT** (Best Available Control Technology)	**LAER** (Lowest Achievable Emissions Rate)

CAA Programs for Criteria Pollutants

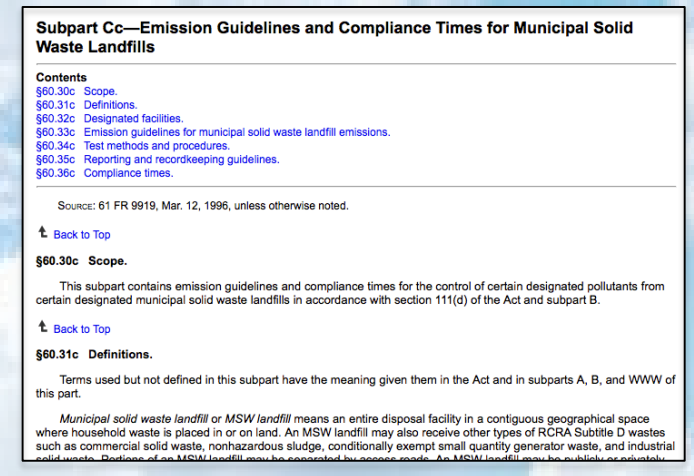
- New Source Performance Standards (NSPS)
- Attainment Program for Non-Attainment areas
- Prevention of Significant Determination (PSD) program for Attainment areas

New Source Review (NSR)

New Source Performance Standards

Apply to specific listed industries
(40 C.F.R. PART 60, examples)

- Fossil-fuel fired steam generators
- Electric utility steam generating units
- Industrial-commercial steam generating units
- Incinerators
- Portland Cement plants
- Nitric acid plants
- Sulfuric acid plants
- Asphalt concrete plants
- Petroleum refineries
- Volatile organic liquid storage vessels



Subpart Cc—Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

Contents

SOURCE: 61 FR 9919, Mar. 12, 1996, unless otherwise noted.

Back to Top

§60.30c Scope.

This subpart contains emission guidelines and compliance times for the control of certain designated pollutants from certain designated municipal solid waste landfills in accordance with section 111(d) of the Act and subpart B.

Back to Top

§60.31c Definitions.

Terms used but not defined in this subpart have the meaning given them in the Act and in subparts A, B, and WWW of this part.

Municipal solid waste landfill or *MSW landfill* means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial

Attainment Program

Permit Conditions for Non-Attainment Areas

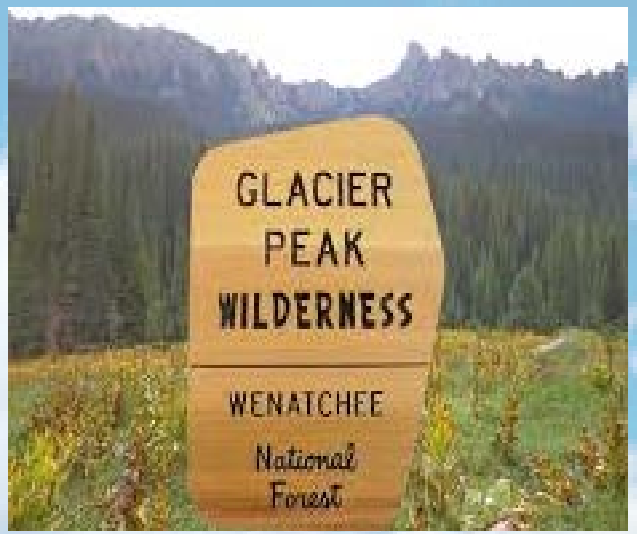
- Net Reduction and Reasonable Further Progress
- Lowest Achievable Emission Rate (LAER)
- All Other Sources in Compliance
- Non-interference with SIP Implementation
- Analysis of Alternatives

Prevention of Significant Deterioration

- Program that applies to **Attainment areas and unclassified areas.**
- The **PSD program goals** are:
  - Avoid new non-attainment areas by ensuring economic growth in harmony with existing clean air;
  - protect public health and welfare from any adverse effects;
  - preserve and enhance the air quality in national parks and other areas of special natural recreational, scenic, or historic value.

PSD Area Classifications

- **CLASS I AREAS**
  - National Parks
  - National Wilderness Areas
  - National Monuments
- **CLASS II AREAS**
  - Everywhere else
- **CLASS III AREAS**
  - Specially Designated Industrial Development Areas



PSD Program Source Categories

(40 C.F.R. Section 52.21)

- Fossil fuel-fired steam electric plants >250 mmBTU/hr
- Coal cleaning plants
- Kraft pulp mills
- Primary zinc smelters
- Iron and steel mill plants
- Primary aluminum ore reduction plants
- Primary copper smelters
- Municipal incinerators >250 tons of refuse per day
- Hydrofluoric acid plants
- Nitric acid plants
- Petroleum refineries

PSD Construction Requirements

- Permit issued
- Proper Review of Permit Conducted, Required Analysis Performed and Public Comment Allowed
- Demonstration that Emissions Won't Exceed Increment, NAAQS or other Applicable Requirement
- Use of Best Available Control Technology
- Special Class I Provisions Complied With
- Analysis of Impacts of Related Growth
- Agreement to Conduct Monitoring to Assess Impact of Emissions

Hazardous Air Pollutants

- Prior to 1990 Amendments, Section 112 required listing potential HAPs and performing a risk analysis prior to control
- In 20 years, only eight NESHAPs were promulgated.
  - Arsenic -Asbestos
  - Benzene -Beryllium
  - Mercury -Radionuclides
  - Vinyl chloride - Coke oven emissions

Listing of HAPs

- Listed 190 new HAPs (187)
- Directed EPA to list source categories
- Applies to Major Sources
  - > 10 TPY for any one HAP
  - > 25 TPY for combination of HAPs
- Application of “MACT”
- Residual risk > 1 x 10^{-6}

MACT Strategies

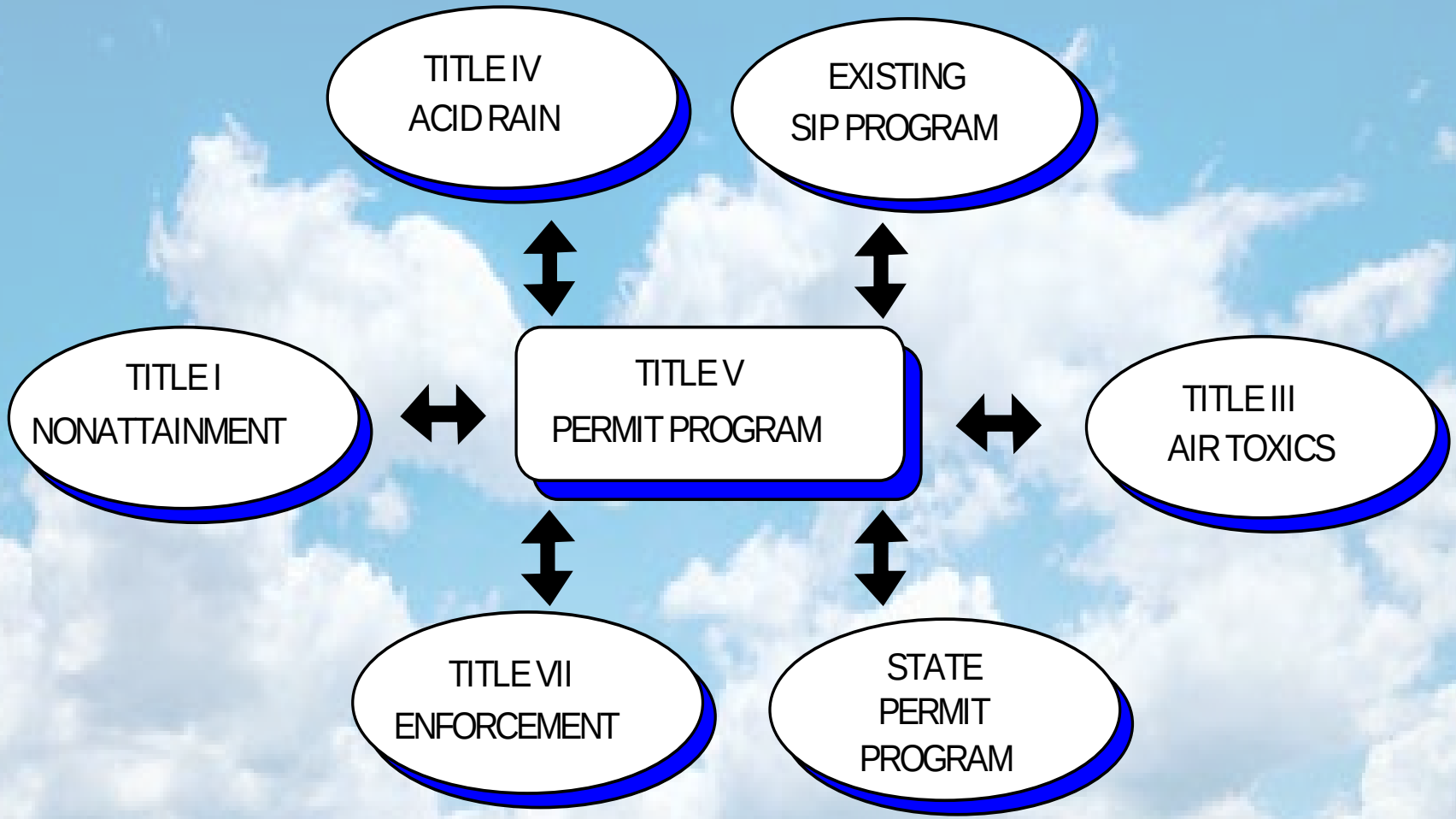
- "MACT" is the maximum achievable control technology
  - Work practice standards
  - Design, equipment, work practice or operational standards
  - Strategies include:
  - Reduce volume
  - Substitute materials
  - Closed systems
  - Collect, capture or treat emissions
  - Certification & training of facility operators
  - Combination of above

MACT Source Categories

(Examples)

- Dry Cleaning
- Aerospace Industry
- Wood Furniture
- Petro Refineries
- Magnetic Tapes
- Coke Ovens
- Polymers and Resins
- Commercial Sterilizers
- Gasoline Distribution
- Oil and Gas Operations
- Rubber tire manufacture
- Printing and Publishing Industry
- Off-Site Waste/Recovery Ops
- Chromium Electroplating Operations
- Hazardous Organic NESHAP
- Marine Vessel Loading Operations
- Hazardous Waste Combustion
- Halogenated Solvent Cleaning
- Secondary Lead Smelters
- Wood furniture

TITLE V: Operating Permits



TITLE V Permit Contents

- **Each permit must include:**
  - **Applicable emission limitations and standards;**
  - **Monitoring, recordkeeping & reporting requirements;**
  - **A severability clause ;**
  - **a statement that the permit may be modified, revoked, etc. for cause; and**
  - **a provision to insure the source pays fees.**
- **The permit must "specifically designate (those provisions) as not being federally enforceable…e.g. any terms and conditions.. not required under the Act" (State-only requirements)**

Acid Deposition Control

- 10 Million tons SOx reduction by 2000
  - First 5 Million by 1995 (Phase I)
- 2 Million tons reduction of NOx from projected Year 2000 levels
- 110 Specific Utility Plants identified Phase I
- Nationwide reduction in Phase II
- Emission allowance trading to reduce costs and provide for future growth
- Clean Coal Technology encouraged

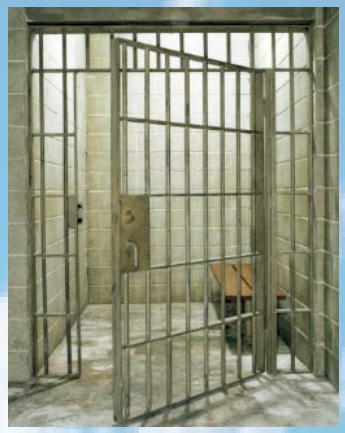
Stratospheric Ozone Protection

- 1990 Amendments established a program for the phase-out of ozone depleting substances (ODSs) generally responsive to the Montreal Protocol.
- Two classes of substances were defined:
  - Class I substances - chlorofluorocarbons (CFCs), halons, carbon tetrachloride, methyl chloroform
  - Class II substances - hydrochlorofluorocarbons (HCFCs)
- Beginning in 1991, it is unlawful for any person to produce any Class I substance in an annual quantity greater than percentages specified in the Act.
  - Exceptions are provided for "essential uses" e.g. methyl bromide for agricultural purposes.

Stratospheric Ozone Protection

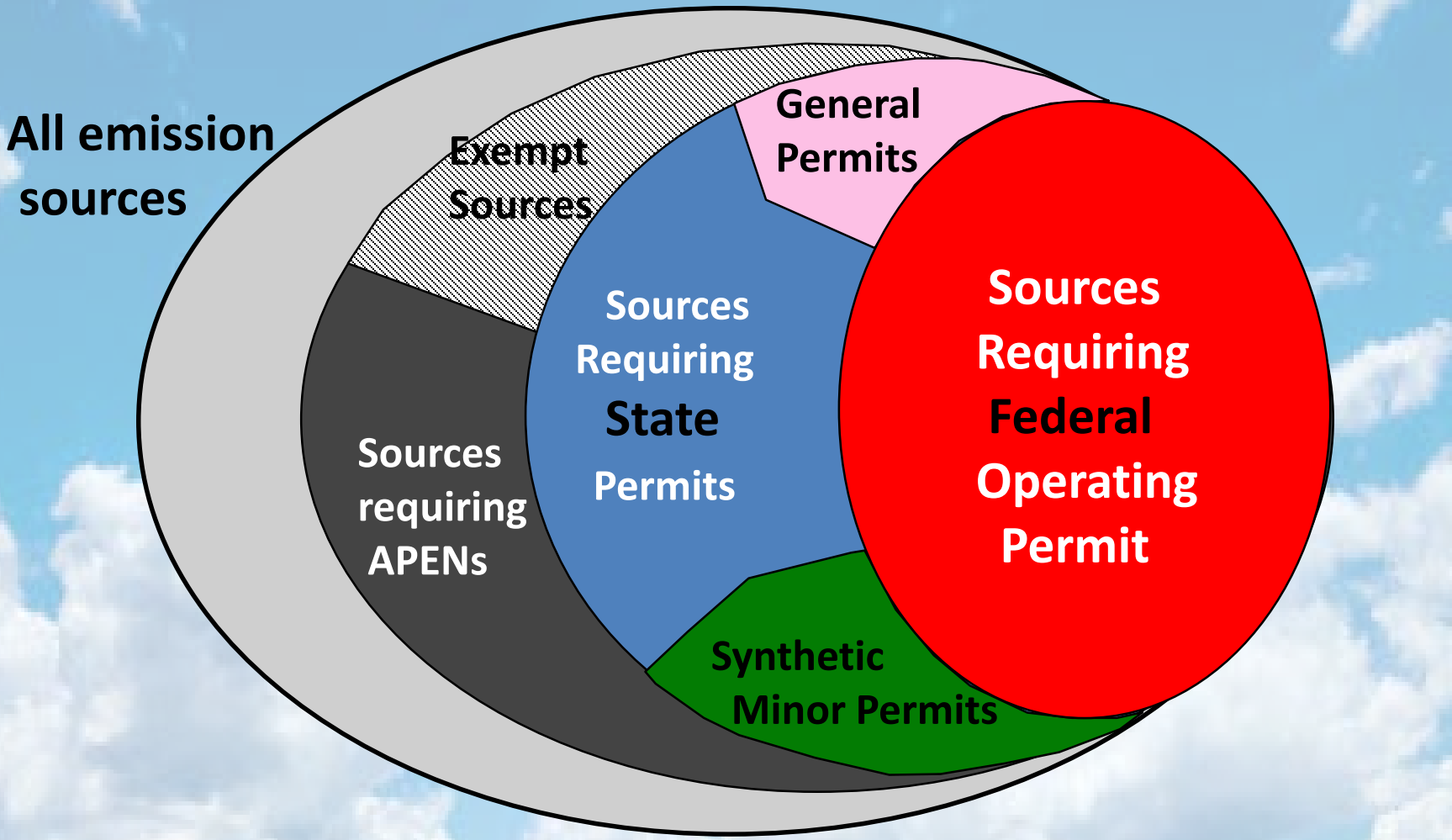
- Beginning in 2000, all production of Class I substances was prohibited with certain exceptions.
- A complete phase-out of the use and production of Class II substances is required by 2030.
- Pursuant to regulations (40 C.F.R. Part 82), the production of all CFCs, methyl chloroform and carbon tetrachloride were eliminated on January 1, 1996.
- For HCFCs, a phase-out schedule on a compound-specific basis runs from 2003 to 2030.

Strong Enforcement Provisions



- Enhanced criminal enforcement
  - Longer prison terms
  - Higher fines
- Easier commencement of civil actions
- Administrative penalties
  - On the spot fines up to $5,000
- Enhanced authority to prevent criminal violators from receiving federal awards

Typical State Permitting Scheme



Sources > 5 TPY in nonattainment

Exempt sources listed as insignificant

Sources > 1 TPY in nonattainment

Sources using general permits

Sources > 100 TPY

Sources limiting < 100 TPY

CAA Future?

Climate Change

- **Massachusetts v. EPA** Supreme Court decision in 2007
- On June 2, 2014, EPA, under President **Obama's Climate Action Plan**, proposed a commonsense plan to cut carbon pollution from existing power plants **(Clean Power Plan)**.
- June, 2014 **Supreme Court** in ***Utility Air Regulatory Group v. EPA***, recognized EPA's power to regulate greenhouse gas emissions but placed limits on the program already in place.
- On **February 9, the Supreme Court** put a hold on President Obama's plan to regulate $C0_2$ emissions from power plants pending the outcome of legal challenge by more than two dozen states.

CAA Future?

Toxic emissions

- EPA estimates that almost 14 million people in more than 60 urban locations have lifetime cancer risks greater than 100 in a million.
- Elevated risks are often found in the largest urban areas where there are multiple emission sources, communities near industrial facilities, and/or areas near large roadways or transportation facilities.
- As directed by Congress, EPA has completed **emissions standards for all 174 major source categories**, and 68 categories of small area sources representing 90 percent of emissions of 30 priority pollutants for urban areas.

Closing

- A few Famous quotes
- Views of our Presidential hopefuls

Thank you!

James “Skip” Spensley
JWSpensley@gmail.com