Clean Air Act 101
Module 3 – Air Toxics

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Overview of Air Toxics Program
Sec. 112 of the CAA
and
Title III of the 1990 Amendments

What is an Air Toxic?

- AKA Hazardous Air Pollutant (HAPS)
- Pollutants "which may reasonably be anticipated to result in an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness"

How Do We Regulate Air Toxics?

- Criteria Pollutants
  - EPA set the NAAQS
  - Areas designated attainment or nonattainment based on ambient air quality data
  - States develop State Implementation Plan to attain and maintain the standard
  - EPA approves the SIP to make Federally Enforceable
- Air Toxics
  - Federal rules developed based on risk and delegated to State and Local Agencies

History of Air Toxics Programs

- Prior to 1990, the Clean Air Act required EPA to set standards for each toxic air pollutant individually, based on its particular health risks. This approach proved difficult and minimally effective at reducing emissions.
  - EPA required to identify all pollutants that caused "serious and irreversible illness or death."
  - Develop standards to reduce emissions of these pollutants to levels that provided an "ample margin of safety" for the public.

History of Air Toxics Programs

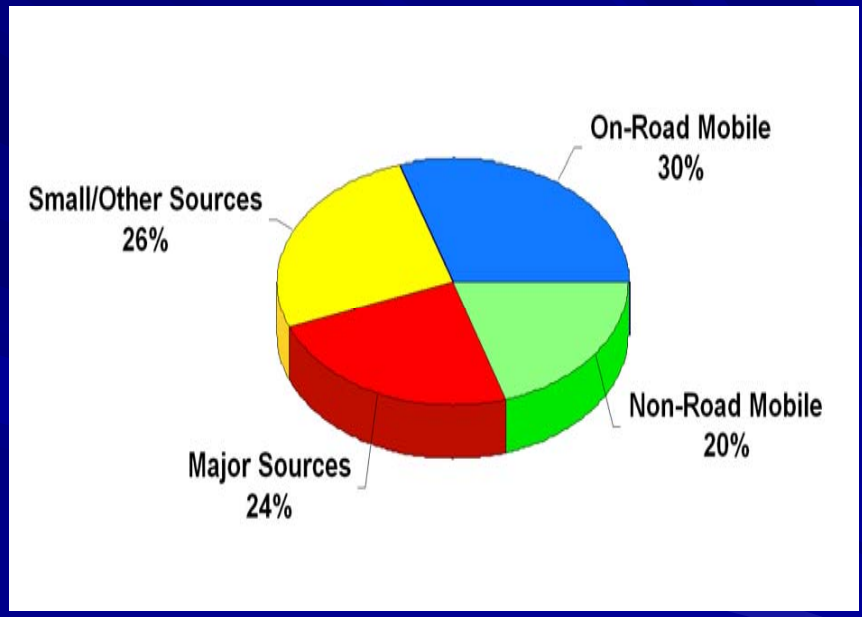
continued

- **Between 1970 and 1990 EPA regulated only seven pollutants (asbestos, benzene, beryllium, inorganic arsenic, mercury, radionuclides, and vinyl chloride) due to complications of risk assessment process**

- **In the 1980s many states developed air toxics requirements due to lack of progress in EPA regulations**

Sources of Air Toxics

Based on 1996 National Toxics Inventory data, major sources account for about 24 percent of air toxics emissions, smaller area sources and other sources (such as forest fires) for 26 percent, and mobile sources for 50 percent. Accidental releases, which also contribute air toxics to the atmosphere, are not included in these estimates.



CAA Amendments of 1990

- Regulations for "area" (small) source categories posing undue risk
- Requirements found in CAA 112
- List of "major" source categories with schedule for regulation
- List of 188 air toxics (now 183)

Major and Area Source Control

- Two step process: Control first then assess remaining risk
  - Technology-based ("Maximum Achievable Control Technology" or "MACT")
  - Risk-based regulations ("Residual Risk")

Setting The MACT

- EPA's MACT standards are based on the emissions levels already achieved by the best-performing similar facilities.
- When developing a MACT standard for a particular source category, EPA looks at the level of emissions currently being achieved by the best-performing similar sources through clean processes, control devices, work practices, or other methods.
- These emissions levels set a baseline (often referred to as the "MACT floor") for the new standard.

Setting The MACT
continued

- At a minimum, a MACT standard must achieve, throughout the industry, a level of emissions control that is at least equivalent to the MACT floor.
- EPA can establish a more stringent standard when this makes economic, environmental, and public health sense.
- The MACT floor is established differently for existing sources and new sources.

Setting The MACT
continued

- For existing sources, the MACT floor must equal the average emissions limitations currently achieved by the best-performing 12 percent of sources in that source category, if there are 30 or more existing sources.

- If there are fewer than 30 existing sources, then the MACT floor must equal the average emissions limitation achieved by the best-performing five sources in the category.

Setting The MACT
continued

- For new sources, the MACT floor must equal the level of emissions control currently achieved by the best-controlled similar source.
- Wherever feasible, EPA writes the final MACT standard as an emissions limit (i.e., as a percent reduction in emissions or a concentration limit that regulated sources must achieve).
- Emissions limits provide flexibility for industry to determine the most effective way to comply with the standard.

Area Sources Controlled Under the Urban Air Toxics Strategy

- Strategy includes development of MACT for Area Sources (less than 10 tons annually of a single hazardous air pollutant or less than 25 tons or more annually of a combination of hazardous air pollutants).

- The goals of the Strategy are to reduce the risk of cancer by 75 percent and to substantially reduce non-cancer risks associated with air toxics from commercial and industrial sources.

Urban Air Toxics Strategy
continued

- The Strategy also reflects the need to address any disproportionate impacts on sensitive populations including children, the elderly, and minority and low-income communities.
- EPA required to identify a list of at least 30 air toxics that pose the greatest potential health threat in urban areas, and for the Strategy, EPA identified a list if 33 air toxics.
- EPA required to identify and list the area source categories that represent 90 percent of the emissions of the 30 urban air toxics associated with area sources and subject them to standards under the CAA section 112(d).

Urban Air Toxics Strategy

continued

- Through three separate listings (including a list in the Urban Air Toxics Strategy), EPA has identified a total of 70 area source categories which represent 90 percent of the emissions of the 30 listed air toxics.
- Of these 70 area source categories, 28 had been regulated by June 2007. EPA was put on a court-ordered schedule to issue the area source rules listed under the Urban Air Toxics Strategy.
- Remaining categories grouped with deadlines completed by June 15, 2009.

Community-Based Programs

- Community Based Programs integral part of Air Toxics Strategy:
  - Assess Local Risk
  - Work with community and stakeholders to reduce risk by voluntary and other measures
  - Provide compliance assistance, outreach and education.

2001 Mobile Source Air Toxics Rule (MSAT)

- Section 202(l) of the Clean Air Act requires EPA to set standards to control hazardous air pollutants from motor vehicles, motor vehicle fuels, or both.

- EPA published a rule under this authority in March 2001 that established toxics emissions performance standards for gasoline refiners and committed to additional rulemaking to evaluate the need for and feasibility of additional controls.

February 2007 MSAT

- MSAT revised to significantly lower emissions of benzene and the other air toxics in three ways:

  (1) by lowering benzene content in gasoline;

  (2) by reducing exhaust emissions from passenger vehicles operated at cold temperatures (under 75 degrees); and

  (3) by reducing emissions that evaporate from, and permeate through, portable fuel containers.

NATIONAL AIR TOXICS ASSESSMENT (NATA)

- Improved monitoring network
- National screening assessment
  - Emissions inventory
  - Ambient air modeling
  - Exposure assessment
  - Risk assessment
- Localized risk assessments

Air Toxics Regulations Summary

- Air Toxics Program amended in Title III of the CAA Amendments
- §112 CAA
- 40 CFR Part 61 NESHAPS “Old Program”
- 40 CFR Part 63 Controls for major and area sources pursuant to §112 (MACT)
- Mobile Source Requirements §202

Other Laws and Regulations

- Emergency planning and community right-to-know (EPCRA), and
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)
  - Accidental release reporting
  - Toxic release inventory (air, water, land)
  - Emergency response plans

Other Laws and Regulations

- Resource, Conservation and Recovery Act (RCRA)
  - Incinerators, boilers and industrial furnaces burning hazardous waste
  - Controls and leak detection for large quantity generators and treatment, storage and disposal facilities
- Toxics substances control act (TSCA)
- Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)

Other Laws and Regulations

- RCRA regulations for hazardous waste combustors are being phased out and will be handled by an air regulation.
- Some air and RCRA regulations overlap so coordination is necessary

End of Clean Air Act 101
Module 3