

MACT Residual Risk Experience

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HISTORY

- 1970 CAA required EPA to regulate HAPs
- In 20 years EPA only regulated 7 HAPs
- 1990 CAAA entirely new and different HAP regulatory program.



1990 CCA Amendments

- Listed 189 substances as HAPs
- EPA to identify source categories of HAPs to which to apply MACT, over 9 years
- Eight years after promulgation, EPA to determine remaining risk after MACT implantation (i.e. residual risk) and need for additional controls



Hazardous Air Pollutant Risk

In 1989 EPA promulgated a HAP regulation for benzene that established the following overall objective for cancer risks:

“protect the greatest number of persons to an individual lifetime risk no higher than one in one million, and limiting to no higher than one in ten thousand the risk to the most exposed individual.”



MACT Standards – 1st Stage

- Section 112(d) of the 1990 CAAA required EPA to establish emission standards for major sources of HAPs.
- Focus on achieving emission reductions through available technologies and work practices.
- Only sources that emit 10 tpy of HAPs, or 25 tpy a mixture of HAPs.
- Existing sources standard based on top 12% (or average of best 5 sources).
- New sources have to achieved emissions of best-controlled source.



1st Stage Achievements

- First standard issued in September 1993 (dry cleaners).
- The last standard was issued in September 2004 (industrial, commercial and institutional boilers and process heaters).
- 1993 thru 2004, EPA published 96 MACT standards covering 156 industry sectors, or source categories.



MACT Requirement

Section 112(d)(6) of the CAA requires EPA to:

*“review and revise as necessary ... ,
emission standards promulgated under
this section no less often than every 8
years.”*

- Not just once, but EVERY 8 years.



MACT Standards – 2nd Stage Residual Risk

Section 112(f) of the Federal Clean Air Act establishes specific requirements:

- Report to Congress within 6 years after enactment of the 1990 CAA Amendments on:
 - Methods of calculating risk remaining after implementation of standards under §112(d) – our current MACT standards;
 - The public health significance of any remaining risks;
 - Technologies available to reduce these risks; and
 - Recommendations on legislation to address these remaining risks.



Residual Risk Standard

Section 112(f)(2)(A) says:

If required to protect the public health or prevent an adverse environmental effect, EPA is to:

- Promulgate new standards for each source category regulated by a §112(d) MACT standard
- Promulgate these 'residual risk' standards within 8 (in some cases, 9) years of final publication of the original MACT standard.



CAA Section 112(f)(2)(A)

- *“... If standards promulgated pursuant to subsection (d) of this section and applicable to a category or subcategory of sources emitting a pollutant (or pollutants) classified as a known, probable or possible human carcinogen do not reduce lifetime excess cancer risks to the individual most exposed to emissions from a source in the category or subcategory to less than one in one million, the Administrator shall promulgate standards under this subsection for such source category.”*



Residual Risk Standard Development

Risk and Technology Review (RTR)

- Effort to evaluate both risk and technology as required by the CAA after the application of MACT.
- EPA intends to analyze risks from air toxics emitted from selected industrial sectors.
- Each industry sector will be analyzed individually.
- Decisions on need for further emissions reductions will be on a sector by sector basis.
- EPA plans to combine RTRs for several industry sectors into single regulatory actions to promote administrative efficiency.



RTR Phase I

First 8 residual risk standards completed to date.

- Coke Ovens
- Dry Cleaning
- Industrial Cooling Towers
- HON
- Gasoline Distribution
- Ethylene Oxide Sterilizers
- Magnetic Tape
- Halogenated Solvents



RTR Phase II

EPA is attempting to streamline the Phase II risk standard development by grouping the remaining MACT source categories into 2 groups.

- RTR Phase II Group 1
 - Polysulfide Rubber
 - Ethylene- Propylene Rubber
 - Butyl Rubber
 - Neoprene
 - Epoxy Resins
 - Non-nylon Polyamides
 - Hydrogen Fluoride
 - Acetal Resins



RTR Phase II Group 2

- Aerospace
- Marine Vessel Loading
- Mineral Wool
- Natural Gas Transmission
- Oil & Natural Gas
- Petroleum Refineries
- Hypalon Production
- Epichlorohydrine
Elastomers
- Polybutadiene Rubber
- Styrene- Butadiene Rubber
- Nitrile Butadiene
Production
- Polystyrene
- Methyl Methacrylate-
Butadiene-Styrene
- Methyl Methacrylate-
Acrylonitrile-Butadiene-Styrene
- Nitrile Resins
- Polyethylene Terephthalate
- Acrylonitrile-Butadiene-Styrene
- Styrene Acrylonitrile
- Pharmaceuticals
- Printing and Publishing
- Primary aluminum
- Ship Building



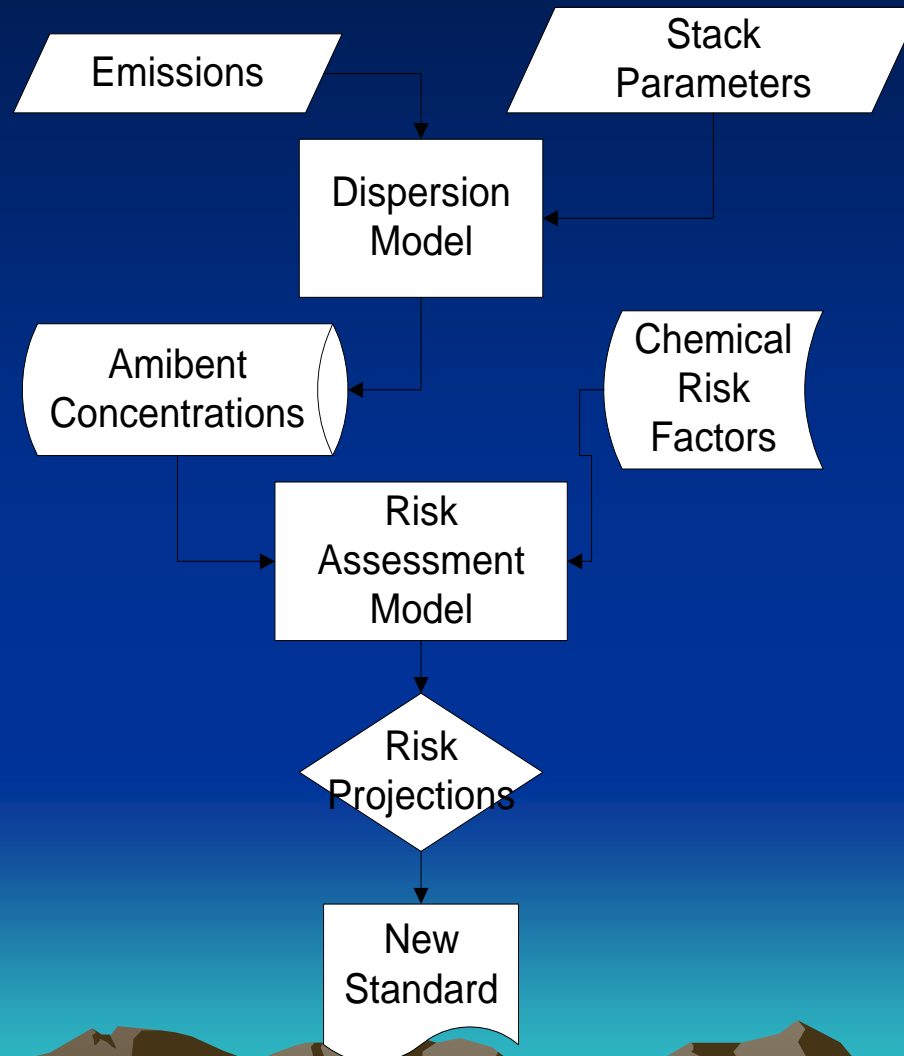
RTR Multi-Pollutant Sector

The Pulp & Paper sector was identified as the candidate industry to pilot EPA's Sector-Based Strategy.

- Pulping & Bleaching Systems (Subpart S)
- Chemical Recovery Combustion Sources (Subpart MM)
- Non-MACT Sources



Risk Assessment



Dispersion Model Inputs

Data source: February 2006 version of 2002 National Emission Inventory (NEI)

Bad News:

- Data is aged, inaccurate and incomplete

Good News:

- EPA knows and asking you to review and correct



Data Issues

Facility Data:

- Closed facilities still shown as active
- New facilities not included
- Facilities located improperly

Emissions Data:

- Old emission inventories
- Incorrect emissions rates
- Wrong pollutants for source

Stack Parameters:

- Incorrect size, location, flow, etc.



EPA Assistance

- Source data available for review at the Risk and Technology web page
 - In Access (or Excel) format
 - Large Files 6MG (52,000 rows of data)
- EPA asking for industry to review data
- EPA providing training on updating database



Resources and Web Links

- Risk and Technology Review page-
<http://www.epa.gov/ttn/atw/rrisk/rtrpg.html>
- RESIDUAL RISK Report to Congress-
http://www.epa.gov/ttn/oarpg/t3/reports/risk_rep.pdf
- RTR Assessment Plan-
http://www.epa.gov/ttn/atw/rrisk/risk_technology_review_plan_sab_charge.zip
- EPA Science Advisory Board-
http://www.epa.gov/sab/panels/consul_risk_and_tech_assessment_plan.htm