HALEY & ALDRICH

# Current Direction of NESHAP *Residual Risk Technology Review*

**The Auditing Roundtable**
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# Presentation Topic

EPA is required to conduct two reviews and update the existing “major source” standards, if necessary

- **Residual Risk Assessment: To determine whether** additional emission reductions are warranted to protect public health or the environment; this is a one-time requirement
- **Technology Reviews: To determine if better emission** control approaches, practices or processes are now available; required every eight years
- http://www.epa.gov/ttn/atw/rrisk/rtrpg.html

# Presentation Overview

- Section 112 Refresher
- Residual Risk and Technology Review Requirements
- Legal Issues
  - SSM Exclusion
- USEPA Approach
  - Environmental Justice
- Industry and Agency Challenges
- RTR Rule Making
- Closing Comments
- Question and Answer

# CAA §112 Background

- Section 112(d) of the 1990 Federal Clean Air Act (FCAA) Amendments required EPA to promulgate regulations establishing emission standards for major and area sources of hazardous air pollutants (HAP)
- First standard issued final in September 1993 (dry cleaners)
- 89 standards have been issued (codified in 40 CFR 63) for all source categories that EPA considers to be significant sources of HAP
- A few standards have regulated area (non-major) sources, but most have regulated only major sources of HAP emissions
- Housekeeping
  - Major sources - ≥ 10 tpy individual/25 tpy total HAPs; MACT
    - MACT – Best performing 12%; or top 5 if less than 30 sources
  - Area source – not major ; GACT or MACT
  - <u>EPA is not required to address area sources in RTR</u>

# RTR Regulatory Background

- Section 112(f) of the Federal Clean Air Act establishes specific requirements: Report to Congress within 6 years after enactment of the 1990 FCAA Amendments on:
  - Methods of calculating risk remaining after implementation of §112(d) standards
  - The public health significance of remaining risks
  - Technologies available to reduce these risks
  - Residual Risk Report to Congress, EPA-453/R-99-001 (March 1999)
- Because Congress did not take any actions based on the recommendations in the referenced report, EPA is to:
  - Promulgate new standards for each source category regulated by a §112(d) MACT standard if such a standard is required to protect the public health or prevent an adverse environmental effect
  - Promulgate these residual risk standards within 8 years of final publication of the original MACT standard

# Risk and Technology Review (RTR)

## Residual Risk

- Control technology improvements that warrant updated MACT
- Address residual public health risk after MACT emission controls
  - Trigger for further review is >1 in million excess cancer risk to most exposed individual
- 112(f) does not determine the level of those standards
  - Benzene NESHAP (54 FR 38044, September 14, 1989)
    - "Ample margin of safety" generally less than 100 in million excess cancer risk. Cost and feasibility of control considered for risks in the 1 to 100 in million range
    - <1.0 hazard index is target for noncarcinogens
    - Can be more stringent if "adverse environmental effect"

# Benzene NESHAP Approach to Risk

## June 2008 - Court upheld EPA's RTR approach

- Not obligated to recalculate MACT floors
- Allows for post-RTR cancer risk above 1 in million, if less than 100 in million per Benzene NESHAP approach cited in 1990 CAA amendments
- Allow "no control" (or existing MACT) if EPA determines existing is sufficient even if not less than 1:1,000,000.
- Considers cancer and other health effects within 50 km exposure radius around facilities.

# Other Important Litigation

## 2007 – Brick MACT

- Incorrectly calculated MACT emissions limits
- Failed to establish emissions limits
- Did not regulate processes that emit HAPs.

## 2000/2001 – Cement Kiln Recycling and National Lime

- Did not regulate processes that emit HAPs.
- Did not establish HAP emissions limits

# Other Important Litigation

## December 2008 – SSM Vacature

- Court vacated startup, shutdown & malfunction (SSM) provisions in 35 NESHAPs
  - Vacated portion of General Provisions in 63.6(f)(1) and (h)(1) that exempt sources from compliance during SSM if SSMP was followed

## Sept 2010 – Consent Decree Sierra Club v. Jackson

- EPA is well beyond 8 year statutory schedule

# RTR – Schedule based on Sierra Club

| MACT | Bin | Proposal | Final | MACT | Bin | Proposal | Final |
|---|---|---|---|---|---|---|---|
| Marine Vessel Loading | 1 | 9/14/2010 | 3/31/2011 | Mineral Wool | 5 | 11/25/2011 | 6/29/2012 |
| Pharmaceuticals | 1 | 914/2010 | 3/31/2011 | Primary Aluminum | 5 | 11/4/2011 | 6/29/2012 |
| Printing and Publishing | 1 | 9/14/2010 | 3/31/2011 | Wool Fiberglass | 5 | 11/4/2011 | 6/29/2012 |
| Chromium Electroplating | 2 | 9/14/2010 | 8/15/2012 | Secondary Aluminum | 5 | 1/30/2012 | 8/31/2012 |
| Polymers and Resins 1 | 2 | 9/14/2010 | 6/30/2011 | Pesticide Active Ingredient Production | 6 | 11/30/2011 | 11/30/2012 |
| Steel Pickling-HCL Process | 2 | 9/14/2010 | 8/15/2012 | Polyether Polyols Production | 6 | 11/30/2011 | 11/30/2012 |
| Primary Lead Smelting | 2 | 1/31/2011 | 11/4/2012 | Polymers and Resins IV | 6 | 11/30/2011 | 11/30/2012 |
| Shipbuilding and Ship Repair | 3 | 12/03/2010 | 11/4/2011 | Acrylic/Modacrylic Fibers | 7 | 10/31/2012 | 10/31/2013 |
| Wood Furniture | 3 | 12/03/2010 | 11/4/2011 | Flexible Polyurethane Foam Production | 7 | 10/31/2012 | 10/31/2013 |
| Pulp and Paper I and III | 4 | 12/15/2011 | 7/31/2012 | Off-Site Waste Recovery Operations | 7 | 10/31/2012 | 10/31/2013 |
| Secondary Lead Smelters | 4 | 4/29/2011 | 12/16/2011 | Phosphoric Acid/Phosphate Fertilizers | 7 | 10/31/2012 | 10/31/2013 |
| Aerospace | 4 | 3/15/2011 | 1/15/2015 | Polycarbonates Production | 7 | 10/31/2012 | 10/31/2013 |
| Ferroalloys Production | 4 | 11/23/2011 | 6/29/2012 | Polymers and Resins III | 7 | 10/31/2012 | 10/31/2013 |
| Portland Cement | 7 | 6/15/2017 | 6/15/2018 | | | | |

# Technology Review - USEPA's Approach

1. Add-on control not identified in MACT rules
2. Add-on control considered and improvements made
3. Work practice, process changes, pollution prevention or operational changes not considered in MACT rule.
4. Equipment changes that may reduce HAPs
5. Reviewed RBLC

# Risk Review - USEPA's Approach

1. Looking back at previous MACT and area source rule development processes
2. Reviewing other applicable rules (NSPS)
3. Authorizing and issuing a new Information Collection Request
4. ICR Compilation and Review – See the Aerospace RTR spreadsheet for example
5. Stack testing
6. May establish model facilities or make assignments of known data to facilities (BEWARE)

# Risk Review - USEPA's Approach(con't)

7. Risk Review
   - Model – Actual and MACT allowable
   - Evaluate the risk from breathing air toxics to the communities
   - The Maximum Individual Cancer Risk (MIR) is one factor in determining whether the risk level is acceptable
   - Considered along with other factors, such as incidence (number of persons suffering health effects), presence of non-cancer health effects and the uncertainties of the risk estimates
   - EPA will generally presume that if the MIR for cancer is less than 1 in 1 million the risk level is acceptable
   - If MIR is greater than 100 in 1 million, risks are generally considered "unacceptable"

# Risk Review - USEPA's Approach(con't)

8. Community Impacts
   - Beyond the CAA requirements, EPA will identify potential Environmental Justice issues, as directed by Executive Order 12898
     - To determine potential EJ issues, demographic analyses of the minority, low-income and indigenous populations
     - Percentages of different social, demographic and economic groups within populations living near the facilities are compared with total percentages of demographic groups nationwide

9. Removal of SSM language

# USEPA and Regulated Industry Challenges

- How many and which facilities to model?
  - Only one for primary lead smelter
- Emission data sets
  - Modeling requires emission point details not found in many EIQs. Most EIQ data are annual
- Sec. 114 data calls are extremely time consuming for both responding facilities and EPA contractors
- Aerospace 114 is a massive spreadsheet with hundreds of low volume coatings that were excluded from MACT as de minimis
- Dispersion modeling
- Further uncertainties of Human Exposure Model (HEM-3).
- Facility-wide vs. source category HAP
- Is all this ripe for challenge and disagreements?

# RTR Standards

# RTR – Mineral Wool and Wool Fiberglass

- Proposed November 2011
- Added pollutants
  - Phenol, Methanol, HF, HCl
- Regulated other processes that emit HAPs
  - Collection and curing
- Removing surrogates excluding PM for metallic HAPs
- SSM revisions for both

# RTR - Pulp & Paper

- Proposed December 2011
- Conducted risk assessments to determine the public cancer and non-cancer risks from each facility
- Found emission health impact following the application of MACT to be acceptable
  - MIR based on actual emissions is 10 in a million
  - MIR based on allowable emissions is 10 in a million
  - 76,000 people have risks of one in a million or more
- Eliminate SSM

# RTR – Pulp and Paper (con't)

- Kraft Condensate Standards - organic HAPs that precipitate out during the collection of gaseous emissions during pulping
  - Current standard: 92% emission control (reduction) and evaluated options between 92-98% control
  - Options beyond 94% become cost prohibitive
  - Proposed 94% control
- Kraft Vent Standards - Address organic toxic gas emissions from pulping and bleaching:
  - Current Standard: 98+% control
  - Further controls not found cost effective
  - No changes proposed

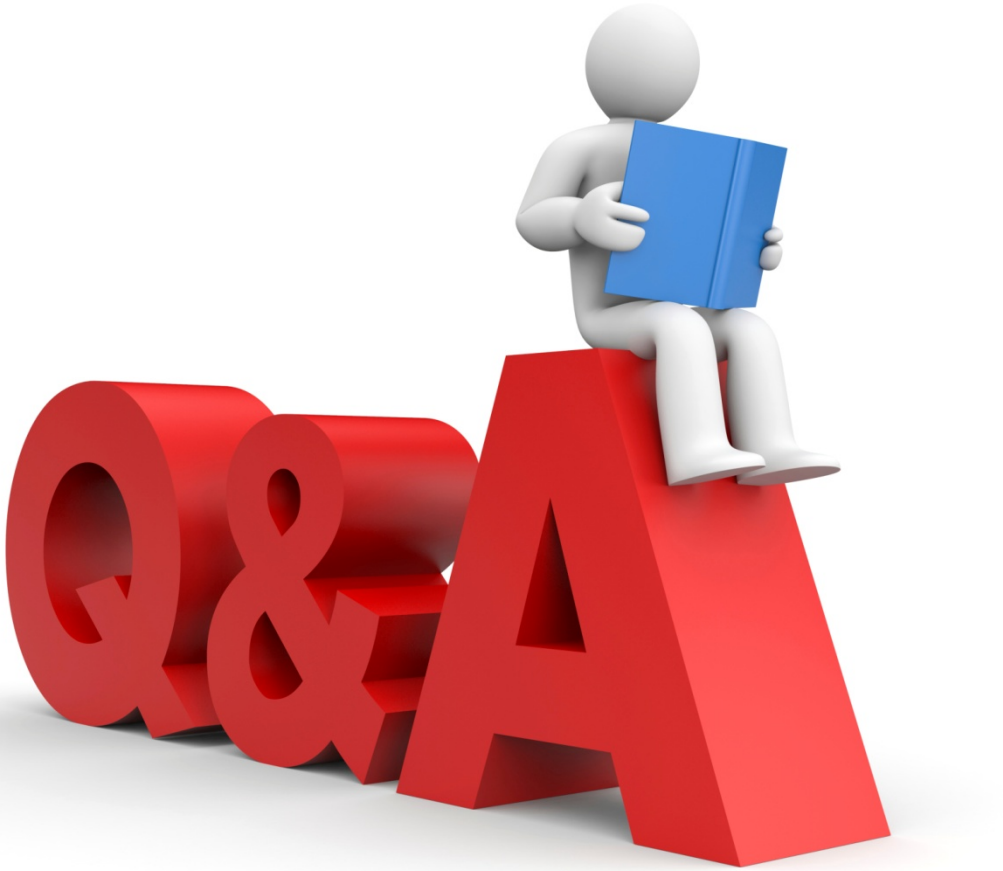
# RTR - Wood Furniture and Shipbuilding

- December 2010
- SSM revisions for both
- Residual health risk:
  - Within acceptable risk for shipbuilding
  - Reduction needed for wood furniture
  - Usage limit on formaldehyde in coatings & adhesives
- Technology review:
  - No change for shipbuilding
  - Disallows conventional spray guns for wood furniture

# Closing Thoughts

# RTR - Proposed and in the Future

- Engage in the residual risk rulemaking process through your industry association
  - ICR development
  - Data Validation and Evaluation
  - Model development (stack parameters, emission rates, etc.)
    - Assignment of emissions to untested sources
    - Actual to MACT allowable
  - Assessment of Risk
- Comment on any proposed rule


Q&A