

# Residual Risk and Technology Review – CAPCA Update

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# Background



- **CAA Section 112 (d) Maximum Achievable Control Technology (MACT)**
  - Completed 96 MACT standards as of February 2004
  - Defense Land Systems & Miscellaneous Equipment (Military MACT) not yet proposed
- **CAA Section 112(d)(6) Technology Review**
  - Review and revise MACT standard every 8 years
  - Evaluate advances in technology
- **CAA Section 112(f) Residual Risk**
  - Assess remaining risk 8 years after promulgation of MACT standard

# Background



- **Approach so far**

- Performed separate risk and technology reviews for the first 8 MACT standards
- Met consent decree schedules
- First 8 reviews show MACT generally did a good job
  - Two MACT standards posed low risks
  - Three MACT standards did not pose low risks but ample margin of safety was met without requiring additional controls
  - Three MACT standards required additional controls
- Each review required significant Agency resources and only three reduced risk

# Is There A Better Way?



- **Combine reviews for the remaining MACT standards into groups**
  - More closely meet statutory dates (without schedule suits, if possible)
  - Raise and resolve programmatic issues in bundles
  - Minimize resources by using available data and focusing attention on high-risk sources
  - Provide better consistency in our analysis and decisions

# How Would We Make Regulatory Decisions?



- **112(f) residual risk would follow the Benzene Policy to identify source categories as:**
  - **Low risk and no risk reduction is needed, presumptive ample margin of safety met**
    - risks are less than 1 in 1 million for cancer and non-cancer HI is less than 1
  - **Not low risk and no additional risk reduction is needed to meet ample margin of safety**
    - Risks are less than 100 in 1 million (acceptable) and
    - No controls are available or controls are not cost effective
  - **Not low risk and additional risk reduction is needed to achieve ample margin of safety**
    - Risks are greater than 100 in 1 million (unacceptable) or
    - Cost effective controls are available
- **112(d)(6) technology review would mirror the ample margin of safety determination**



- **Risk and Technology Review (RTR)**

- Bin MACT standards into phases/groups
- Extract MACT source category data from latest emissions inventory
  - For the first 33 MACT standards used 2002 NEI
  - Supplement with updated industry supplied data
- Perform a preliminary assessment of each category to obtain inhalation risks, including cancer risk and incidence, population cancer risk, non-cancer effects (chronic and acute), and key HAP drivers
- Solicit public review and comment on the data and present risk results and obtain better source data (via ANPRM)
- Remodel the categories based on the ANPRM response
- Perform screening level multipathway analysis if necessary
- Make acceptability and ample margin of safety determinations
- Propose, address public comments, and take final action

# Current Status



## **RTR Phase I – Complete**

First 8 standards that were addressed separately under consent decrees

## **RTR Phase II – Consists of Groups 1, 2, and 3**

- **Group 1 consists of 4 MACTs we consider to be low risk**
  - Went directly to NPRM
  - We are very close to publishing the Group 1 NPRM (November 2007)
- **Group 2 consists of 12 MACTs**
  - Published the Group 2 ANPRM on March 29, 2007
  - Plan to propose 5 MACTs (Group 2A) by the end of 2007/early 2008
  - Plan to propose remaining 6 MACTs (Group 2B) late Summer 2008
  - Published the NPRM for Petroleum Refineries on September 4, 2007
- **Group 3 consists of 18 MACTs**
  - We are in the process of preparing a Group 3 ANPRM and expect to publish in Federal Register by end of the 2007/early 2008

# RTR Phase I



## Completed first 8 reviews

- April 2005
  - Coke ovens
- March 2006
  - Industrial cooling towers
  - Magnetic tape
  - Ethylene oxide sterilizers
  - Gasoline distribution
- July 2006
  - Dry Cleaning
- December 2006
  - Hazardous Organic NESHAP (HON)
- April 2007
  - Halogenated Solvents

# RTR Phase II



## Group 1 (Propose in Nov 2007)

- Polymers and Resins I (4 source categories)
- Polymers and Resins II (2 source categories)
- Hydrogen Fluoride
- Acetal Resins

## Group 2A (Propose in Jan 2008)

- Group I Polymers and Resins (5 source categories)
- Pharmaceuticals Production
- Marine Tank Vessel Loading Operations
- Mineral Wool Production
- Printing and Publishing Industry

## Group 2B (Propose August 2008)

- Aerospace Manufacturing and Rework Facilities
- Natural Gas Transmission and Storage
- Oil and Natural Gas Production
- Primary Aluminum Reduction Plants
- Group IV Polymers and Resins ( 7 source categories)
- Shipbuilding Coatings

# RTR Phase II



## Group 3 (ANPRM by Jan 08)

- Polycarbonates
- Acrylic/Modacrylic Fibers
- Off-Site Waste Treatment
- Phosphate Fertilizer
- Phosphoric Acid
- Primary Lead Smelting
- POTW
- Ferroalloys
- Steel Pickling
- Secondary Lead
- Chrome Electroplating (3 source categories)
- Flexible Polyurethane Foam
- Secondary Aluminum
- Pulp and Paper MACTs I, II and III
- Wood Furniture
- Wool Fiberglass
- Portland Cement
- Polyether Polyols

## RTR and the National Emission Inventory (NEI)



- RTR process supports development of NEI
  - Comments from ANPRM and NPRM
- NEI supports development of risk for RTR
  - Use pre-ANPRM inventory to support preliminary assessment of risk
  - Use post-ANPRM inventory to support proposed rulemaking

# RTR and the National Emission Inventory (NEI)



- Start with the a base inventory
  - 2002 National Emissions Inventory (NEI) Version 3 - current
  - 2005 NEI in early 2008
- Internal review of inventory by OAQPS MACT engineers
  - Consistency
  - Representative of source category
- Solicit comments via ANPRM process
  - Provide facility specific inventory and preliminary risk results
    - [www.epa.gov/ttn/atw/rrisk/rtrpg.html](http://www.epa.gov/ttn/atw/rrisk/rtrpg.html)
  - Request comments and clarifications on anomalies
  - 90 day comment period

# RTR and the National Emission Inventory (NEI)



- Comments accepted only electronically, via ANPRM database
  - Documentation must accompany proposed revisions
- EPA will evaluate and incorporate proposed revisions
  - Review proposed revisions and documentation
  - Resolve data discrepancies between proposed revisions and original data source
  - Share comments with S/L/T as needed
- Incorporate revisions
  - Develop inventory for rulemaking (NPRM database)
- Key Issues from initial ANPRM
  - Emissions
  - Applicability (MACT codes)
  - Missing sources
  - Source locations
  - Speciation
  - Acute multiplier



# Technology Transfer Network Air Toxics Website

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The Risk and Technology Review (RTR) is a combined effort to evaluate both risk and technology as required by the Clean Air Act (CAA) after the application of maximum achievable control technology (MACT) standards. [Section 112\(f\)](#) of the CAA requires EPA to complete a Report to Congress that includes a discussion of methods the EPA would use to evaluate the risks remaining after the application of MACT standards. These are known as residual risks. EPA published the [Residual Risk Report to Congress](#) in March 1999. Section 112(f) (2) directs EPA to conduct risk assessments on each source category subject to MACT standards, and to determine if additional standards are needed to reduce residual risks. Section 112(d)(6) of the CAA requires EPA to review and revise the MACT standards, as necessary, taking into account developments in practices, processes and control technologies.

RTR Phase I consists of the first 8 residual risk standards completed to date (except for the Halogenated Solvents residual risk rule with a promulgation date extension to April 2007). EPA plans to streamline the residual risk standard development process in RTR Phase II by grouping the next MACT source categories requiring residual risk and technology reviews. The methodology for conducting these reviews is described in the [RTR Assessment Plan](#). The Science Advisory Board (SAB) consultation on the RTR Assessment Plan is complete and written comments are available at the [SAB website](#). Below is a list of MACT source categories evaluated under RTR Phase I and those being considered for RTR Phase II and the corresponding EPA contacts. Emissions data and source category summaries for each RTR Phase II Group 2 source category are presented below. EPA is requesting comment on the emissions data through the RTR Phase II Advanced Notice of Proposed Rulemaking (ANPRM). It will be used to assess the residual risk associated with each source category. Click here for [detailed instructions for downloading and updating the emissions data](#). Emissions data for each RTR Phase II Group 2 source category is also presented below. The Group 1 source category information will be summarized in a document that will be released with the upcoming Group 1 Notice of Proposed Rulemaking (NPRM) in Summer 2007.

Date	Description	File
3/26/2007	Fact Sheet: Advance notice of proposed rulemaking (ANPRM): Risk and Technology Review, Phase II, Group 2	

# MACT Source Category Review of 2002 NEI Data

Please read the instructions before exploring and revising the data.



**View Instructions**



**Very Important !!!**

**View Summary Data**



**Revise Data**



**Review Revisions**

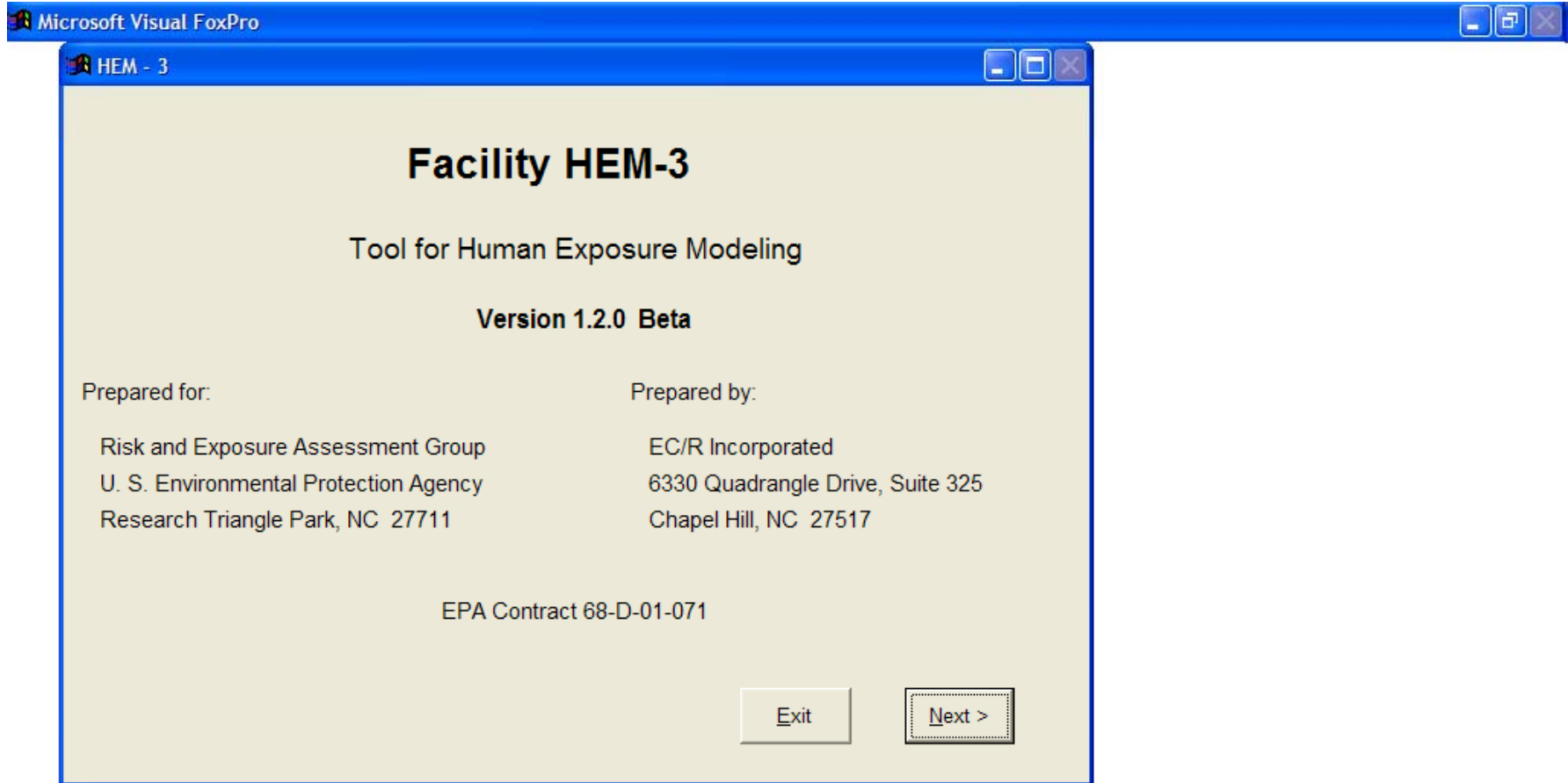


**Submit Revisions**





- Inhalation Assessment
  - Utilize Human Exposure Model 3 (HEM3)
- Multipathway/Ecological Assessment
  - HHRAP Approach
  - Utilize TRIM Screen Model



Available at:

[http://www.epa.gov/ttn/fera/human\\_hem.html](http://www.epa.gov/ttn/fera/human_hem.html)

## RTR: HEM3 Summary



- Based on AERMOD (07026)
- Run for each facility in source category to predict both chronic & acute; cancer & noncancer risks
- Receptors based on 2000 census blocks
- Meteorological data selected for each facility
  - 5 stations in NC
  - 3 stations in SC



- **Chronic**
  - Maximum Individual Risk (MIR) - highest risk at a census block centroid (cancer & noncancer)
  - Cancer incidence
  - Cancer risk distributions
- **Acute**
  - Maximum off-site impact – highest of census block and polar grid receptors
- **Population risk levels**
  - Facility and source category cancer incidence levels



- **Goals**
  - Identify source categories with potential human multipathway or ecological risks
  - Set them on separate, refined analytical path
  
- **Approach**
  - Iterative process for source categories emitting PBT- HAPS
    - HHRAP emission thresholds developed using “worst-case facility“
    - TRIM model in screening mode
    - TRIM model in refined mode



# Contact Information



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