
Life after MACT: Emerging and Future Regulation for Hazardous Air Pollutants

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Residual Risk: Proposals and Rules

Summary of Residual Risk Activities

- Coke ovens rule promulgated 3/05
 - Tightened standards moderately for a limited number of facilities
 - Set forth several general policies, principles; e.g.,
 - Reinforced use of 2-step decision process: first determine acceptability, then ample margin of safety
 - Facility risks could be considered in ample margin of safety determinations, not acceptability determinations
 - Intent to provide multiple risk metrics, move toward probabilistic assessments, where appropriate
 - Intent to improve multipathway and ecological risk assessments
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Summary of Residual Risk Activities

(cont.)

- Several proposals for no further action
 - Gasoline distribution
 - Risks low, but not below statutory trigger (1 in a million cancer risk)
 - Additional controls could reduce risk minimally
 - Cost of controls was exorbitant
 - Proposal issued 8/05
 - Ethylene oxide sterilizers
 - Maximum cancer risks near upper limit of “acceptable”
 - Additional controls unfeasible; process provides health benefits
 - Proposal approved by OMB; publication soon
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Summary of Residual Risk Activities

(cont.)

- Proposals of no further action (cont.)
 - Industrial process cooling towers
 - MACT rule banned use of chrome as corrosion inhibitor
 - Assessment determined that risks from all other HAP were below statutory trigger, residual risk rule unnecessary
 - Proposal approved by OMB, publication soon
 - Magnetic tape manufacturing
 - Assessment determined risks to be below trigger, residual risk rule unnecessary
 - Proposal approved by OMB, publication soon
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Summary of Residual Risk Activities

(cont.)

- One proposal imminent
 - Perchloroethylene dry cleaners
 - Risks generally high, even for some smaller area sources
 - Risks unusually high for some “co-residential” area sources – based on limited monitoring
 - Proposal aims to improve levels of control for major and area sources
 - Considering banning future location of area sources in residential buildings
 - Proposal release targeted for October
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Summary of Residual Risk Activities

(cont.)

- Two proposals on horizon
 - Hazardous organic chemical manufacturing (HON)
 - Maximum cancer risks near upper limit of “acceptable”
 - Additional controls feasible, minimal risk reduction, moderate costs
 - Currently weighing “ample margin of safety” options for proposal; targeted date for release, 2/06
 - Halogenated solvent cleaners (a.k.a. degreasers)
 - Maximum cancer risks near upper limit of “acceptable”
 - Currently weighing “ample margin of safety” options for proposal; targeted date for release, 2/06
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Summary of Residual Risk Activities

(cont.)

- Court-ordered deadlines
 - Gasoline dist, ethylene oxide, cooling towers, mag tape due 3/06
 - Dry cleaners due 4/06
 - HON, Degreasers due 12/06
 - 12 additional source categories on horizon
 - Statutory deadlines have passed, no court-ordered deadlines yet
 - Includes refineries, aerospace, chrome platers among others
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Still seeking ways of reducing residual risk burden for low risk sources

- May seek comment on allowing low-risk HON or Degreaser sources to demonstrate compliance via risk assessment
 - Assessment must show risks below target
 - Emission rates used for assessment must be included in permit as limits
 - Developing process rule for whole facilities (TFLRD – see next section)
 - Considering alternative process for entire program (GRRR – see following section)
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Overview of the Total Facility Low Risk Demonstration (TFLRD) Rule

Background

- Section 112(f) requires that EPA set standards for HAP emissions if significant risks to human health or the environment remain after MACT
 - In general, these standards apply to all sources in a source category
 - Goal of TFLRD: Allow individual facilities (on a voluntary basis) to demonstrate that their emissions, after implementation of MACT, pose insignificant risks to public health and the environment
 - Facilities that meet the low risk criteria defined in TFLRD automatically meet their 112(f) requirements
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Steps in the TFLRD Process

- Step 1 -- Facility conducts a total facility risk assessment that includes all relevant hazardous air pollutants
 - Step 2 -- If they meet the low risk criteria defined in TFLRD, facility submits risk assessment to EPA and permitting authority
 - Low risk criteria: maximum cancer risk $\leq 1\text{E-}06$, all non-cancer hazard index values ≤ 1 , all ecological hazard quotient values ≤ 1
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Steps (Cont.)

- Step 3 -- Review and approval: We are evaluating several options
 - Could involve 3rd party peer review, review by permitting authority, audit by EPA, or some combination
 - Step 4 – Facility-specific operating parameters that impact risk must then be incorporated into Title V permit
 - Parameters become enforceable permit limits
 - Subsequent changes at facility would trigger re-evaluation
 - Facilities that successfully complete this process deemed to be in compliance with any current or future relevant 112(f) requirements
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Potential Benefits of TFLRD

- Could achieve voluntary risk reductions from facilities that would not be required to reduce risks under the current residual risk program
 - Will target emission reductions under the residual risk program, making them more cost-effective and justifiable
 - Will provide high quality site-specific emissions data for use in future assessments and emission reduction strategies
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Status of TFLRD

- Workgroup has developed a draft rule
 - OAR management briefings on the rule are ongoing
 - Proposed rule anticipated in early 2006
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Overview of a Generic Process for Accomplishing the Goals of the Residual Risk Program

Background

- There are approximately 100 source categories that will be subject to the residual risk program
 - Under the current program, EPA assesses each of these source categories individually
 - This approach makes inefficient use of limited resources
 - Assessments for low risk source categories require a disproportionately large resource investment compared to the potential for health and ecological benefits from further control
 - Goals of a generic approach to residual risk
 - Make efficient use of limited resources by focusing most of our risk reduction efforts on highest risk sources
 - Distribute resource burden across EPA, states, and industry
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Preliminary Outline of a Generic Residual Risk Rule (GRRR)

- Sources subject to MACT would be required to conduct a site-specific risk assessment
 - Assessments are then submitted to EPA and permitting authorities for review and approval
 - Details of review/approval process have not yet been developed, but it could involve review of some or all assessments by EPA and/or states
 - Timing requirements for submittals are also being developed
 - Based on the results of their assessments, sources would be binned into low, medium, and high risk categories
 - Low risk: Maximum cancer risk less than 1 in 1 million and non-cancer target organ specific hazard index ≤ 1
 - Medium and high risk criteria have not yet been defined
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Risk Reduction Requirements Would Depend Upon Risk Level

- Low risk sources: no further control requirements under the residual risk program
 - Sources must incorporate risk parameters as limits in their Title V permits
 - Medium risk sources: would decrease risks if feasible and cost-effective
 - Process is currently being developed for determining which sources would decrease risks further
 - High risk sources: would develop a risk reduction plan and decrease risks at least to “medium risk” range
 - EPA would review and approve all risk assessments and risk reduction plans for high risk sources
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Potential Advantages of GRRR

- Efficient use of EPA resources
 - GRRR will allow us to focus most of our resources on risk reduction at the highest risk sources while expending little effort on the low risk sources
 - Spreads the resource burden across EPA, states, and industry
 - GRRR will allow EPA to accomplish residual risk goals even with current budget limitations
 - Accurate characterization of risks
 - GRRR will focus on source-specific assessments using information from the source itself
 - GRRR will provide high quality site-specific emissions data for use in future assessments and emission reduction strategies
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Status of GRRR

- Informal “work-in-progress”
 - Staff discussing potential options, pros and cons, weighing costs and benefits
 - Goal: present strategies to OAR management and obtain buy-in before proceeding toward formal Agency rulemaking process
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