The Use of the 2002 NEI in the Risk and Technology Review (RTR)

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ABSTRACT
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)(2) of the CAA
requires EPA to evaluate the risks remaining after the implementation of MACT
standards (known as residual risks). This section of the CAA requires 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. MACT standards are developed
under Section 112(d) of the CAA. Section 112 (d)(6) of the CAA requires EPA to review
and revise as necessary (taking into account developments in practices, processes and
control technologies) MACT standards every eight years. EPA streamlined the residual
risk standard development and review of existing MACT standards in the RTR by
combining 22 MACT source categories requiring residual risk and technology reviews
into one group. The RTR process is currently undergoing peer review by EPA's
Scientific Advisory Board (SAB).

The 2002 NEI is the starting point for the risk assessment in support of the RTR. The
2002 NEI data for the subject source categories will be modeled as part of the residual
risk assessment. The assessment results will be used to determine if residual risk
standards are needed to reduce risk for the RTR categories. 2002 NEI data will also be
required to conduct the MACT technology review.

This paper discusses the steps in compiling the 2002 NEI data for RTR modeling,
summarizes SAB comments on the use of the NEI for RTR, and identifies critical data
elements in the NEI that affect risk results in RTR.

INTRODUCTION
Section 112 of the CAA establishes a two-stage regulatory process to address emissions
of hazardous air pollutants (HAPs) from stationary sources – MACT standard and
residual risks standard development. In the first stage, after EPA identified categories of

sources emitting one or more of HAPs listed in section 112(b) of the CAA, Section 112(d) of the CAA requires the promulgation of technology-based emission standards for those source categories. For major sources that emit or have the potential to emit 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAPs, these technology-based emission standards must reflect the maximum reductions of HAPs achievable (after considering cost, energy requirements, and non-air health and environmental impacts) and are commonly referred to as MACT standards. Between 1993 and 2004, EPA published 96 MACT standards covering 174 industry sectors, or source categories. In this first stage, the focus of the CAA is on reducing HAP emissions through the use of available technologies. The CAA requires EPA to review these emission standards and to revise them "as necessary (taking into account developments in practices, processes, and control technologies)" no less frequently than every 8 years.

The second stage in the CAA addressing HAPs focuses on reducing any remaining "residual" risk. In March 1999, EPA prepared and submitted the Residual Risk Report to Congress which discusses the methodology that is used in to develop residual risk standards. (http://www.epa.gov/ttn/atw/rrisk/rtrpg.html) Section 112(f)(2) of the CAA directs EPA to assess the residual risk remaining after implementation of MACT standards and to promulgate more stringent standards for sources subject to MACT standards if residual risk standards are necessary to protect public health with an ample margin of safety or to prevent adverse environmental effects, taking into account costs, energy, safety and other relevant factors. EPA has defined an "ample margin of safety" as:

 (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately 1 in 1 million; and

 (2) limiting to no higher than approximately 1 in 10 thousand the estimated risk that a person living near a plant would have if they were exposed to the maximum pollutant concentrations for 70 years. (FR 38044, Sept. 14, 1989).

The evaluation of residual risks includes assessments for:
- human inhalation of HAPs,
- multi-pathway exposure (exposures due to ingestion or dermal exposures) of humans to emissions of persistent bioaccumulative HAPs (PB-HAPs), and
- ecological effects.

Multi-pathway assessments include analyzing PB-HAP concentrations in the surrounding environment. PB-HAPs include the following compounds.

Cadmium compounds	Lead compounds
Chlordane	Mercury compounds
Chlorinated dibenzodioxins and furans	Methoxychlor
DDE	Polychlorinated Biphenyls (PCBs)
Heptachlor	Polycyclic Organic Matter (POM)
Hexachlorocyclohexane	Toxaphene
Hexachlorobenzene	Trifluralin

(EPA, 2004. Air Toxics Risk Assessment Reference Library, Volume 1, Exhibit 14-1.)

The initial goal of residual risk assessments is to determine if MACT standards have reduced lifetime excess cancer risks to the maximum individual risk (MIR) to HAP emissions from a source in a category or subcategory to less than 1 in 1 million. The MIR is defined as an individual who has been determined to "live" in a census block (based on 2002 census data) that currently shows at least one resident. If EPA determines that the MACT standards for a source category do not protect public health with an ample margin of safety or prevent adverse environmental effects, then the CAA requires EPA to promulgate residual risk standards.

To date, EPA has conducted technology reviews and promulgated residual risk rules for 8 MACT standards and their associated source categories. In an effort to meet statutory deadlines, EPA is streamlining the residual risk standard development process for the remaining source categories by addressing residual risk and performing technology reviews for several source categories in one combined effort, known as the Risk and Technology Review (RTR). The initial 8 residual risk rules and accompanied technology reviews are known as RTR Phase I. The next phase, RTR Phase II, will consider the residual risk and technology review for the 30 source categories noted in Table 1. RTR Phase II will be implemented in 2 groups. Group 1 includes 8 MACT source categories in which EPA believes that the risks associated with emissions will protect public health with an ample margin of safety and not be associated with any adverse environmental effects. Group 2 includes the 22 MACT source categories that are currently undergoing a public review of the emissions data.. Other MACT categories will be evaluated in the future. Although the RTR risk characterization process will be streamlined, each source category will be assessed independently and decisions on the development of any standards will be made individually for each source category.

The 2002 NEI data for RTR categories will serve as input in the exposure and risk characterization as part of the residual risk assessment. EPA's Human Exposure Model (HEM) will be used to model risks from human inhalation of HAPs. The HEM model contains the EPA's dispersion model, AERMOD. EPA's Total Risk Integrated Model (TRIM) will be used to model multi-pathway exposure to PB-HAPs. Modeling results will help EPA determine if residual risk standards are needed to reduce risks from HAPs emitted from RTR categories. Critical data elements in the NEI such as source characterization (MACT code assignment), facility information, pollutant emissions, stack parameters, and geographical coordinates will influence risk results for facilities modeled as part of the RTR categories. As risk assessment results will be evaluated at the census block in RTR, it is very important that the NEI data elements of emissions by individual pollutant, geographical coordinates, and stack parameters are accurate. These data elements will directly influence the modeling results for RTR and any decision regarding development of residual risk standards. For more information about the 2002 NEI, please read the following reports, Documentation for the Final 2002 Point Source National Emissions Inventory and NEI Quality Assurance and Data Augmentation for Point Sources found at:
http://www.epa.gov/ttn/chief/net/2002inventory.html#documentation. Further information on the risk characterization approach can be found in the RTR Assessment Plan at: http://www.epa.gov/ttn/atw/rrisk/risk_technology_review_plan_sab_charge.zip

In March of 2007, EPA published an Advanced Notice of Proposed Rule Making (ANPRM) in the Federal Register to solicit public comment on the 2002 NEI data that the EPA will use in RTR Phase II, Group 2. EPA is providing the public an opportunity to submit technical corrections and updates to the emissions and source data located at the Risk and Technology Review, Phase II website, http://www.epa.gov/ttn/atw/rrisk/. The ANPRM seeks comment on NEI emissions estimates of HAPs and other model input data that will be used to assess risks from RTR categories. Reviewers are required to submit supporting documentation with their proposed revisions to EPA.

EPA will review proposed NEI revisions and supporting documentation that are received from the ANPRM and determine which revisions to process. EPA will then revise version 3 of 2002 NEI to prepare version 4 of the 2002 NEI. Version 4 of the 2002 NEI data will serve as the input to the risk assessments to determine the level of risks expected from inhalation and multi-pathway exposure to HAPs emitted from RTR categories. EPA will use these risk assessments as the basis for its decisions on whether to propose additional standards to address residual risks for each source category. In addition, EPA will perform technology reviews of existing MACT standards for each industry sector.

Table 1. Phase II RTR Categories

MACT CODE	MACT SOURCE CATEGORY	RTR PHASE
1301	Acetal Resins Production	Phase II Group 1
1307	Butyl Rubber Production	Phase II Group 1
1312	Epoxy Resins Production	Phase II Group 1
1313	Ethylene-Propylene Rubber Production	Phase II Group 1
1409	Hydrogen Fluoride Production	Phase II Group 1
1320	Neoprene Production	Phase II Group 1
1322	Non-Nylon Polyamides Production	Phase II Group 1
1332	Polysulfide Rubber Production	Phase II Group 1
1302	Acrylonitrile-Butadiene-Styrene Production	Phase II Group 2
0701	Aerospace Industries	Phase II Group 2
1311	Epichlorohydrin Elastomers Production	Phase II Group 2
1315	Hypalon (TM) Production	Phase II Group 2
0603	Marine Vessel Loading Operations	Phase II Group 2
1317	Methyl Methacrylate-Acrylonitrile-Butadiene-Styrene Production	Phase II Group 2
1318	Methyl Methacrylate-Butadiene-Styrene Terpolymers Production	Phase II Group 2
0409	Mineral Wool Production	Phase II Group 2
0504	Natural Gas Transmission & Storage	Phase II Group 2
1321	Nitrile Butadiene Rubber Production	Phase II Group 2
1342	Nitrile Resins Production	Phase II Group 2
0501	Oil & Natural Gas Production	Phase II Group 2
0503	Petroleum Refineries - Other Sources Not Distinctly Listed	Phase II Group 2
1201	Pharmaceutical Production	Phase II Group 2
1325	Polybutadiene Rubber Production	Phase II Group 2
1328	Polyethylene Terephthalate Production	Phase II Group 2
1331	Polystyrene Production	Phase II Group 2
0201	Primary Aluminum Production	Phase II Group 2
0714	Printing/Publishing (Surface Coating)	Phase II Group 2
0715	Shipbuilding & Ship Repair (Surface Coating)	Phase II Group 2
1338	Styrene Acrylonitrile Production	Phase II Group 2
1339	Styrene-Butadiene Rubber & Latex Production	Phase II Group 2

CRITICAL DATA ELEMENTS IN THE 2002 NEI FOR USE IN RTR RISK ASSESSMENTS

The 2002 NEI is a key component of the RTR. These critical data elements include:

- MACT Codes
- HAP Emissions Performance Level (actual, allowable, potential, maximum emissions)
- Pollutants
- Emissions
- Facility Category (Major vs. Area designation)
- Stack Parameters
- Geographical Coordinates

MACT Code Assignment

MACT Codes in the NEI identify processes that are or will be subject to MACT standards or new Section 112 (k) area source standards. The MACT code is assigned in the NEI by a variety of methods, and the source of the MACT code is shown in the NEI data field, MACT Code Flag. The first preference in assigning MACT codes is given to the original data provider. Thus, when a state, local agency or tribe supplies a MACT code, EPA retains the MACT code, and populates the MACT Code Flag as "STATE-BASED". When data are received from EPA MACT engineers, EPA assigns the appropriate MACT Code and populates the MACT Code Flag as "ESD-BASED". If data submitters did not provide MACT codes in their 2002 submittals, then EPA defaults MACT codes in the 2002 NEI by using facility lists, or applying Source Classification Code (SCC), Standard Industrial Classification (SIC) code, and North American Industry Classification (NAICS) code defaults. MACT codes are assigned to processes in the NEI using the following hierarchy.

1. Emissions data provided by EPA.
2. Emissions data provided by a state, local agency, or tribe
3. Utility data provided by EPA
4. Facility list provided by EPA's MACT engineers
5. SCC/MACT Code dictionary
6. SIC Code/MACT Code dictionary
7. NAICS Code/MACT Code dictionary

In all cases, any one process and thus any single emission record is associated with one and only one MACT category. When a MACT Code is assigned to a process, all pollutants emitted from the process are associated with the MACT source category.

MACT Code assignment by data submitters is preferred in the NEI. States, local agencies and tribes are aware of the regulations that apply to facilities. EPA engineers who are responsible for developing the MACT standards often provide input to populate the MACT source category code fields. Most of the MACT code assignments in the NEI are based on SIC code, NAICS code, or SCC defaults.

HAP Emissions Performance Level

The HAP Emissions Performance level in the NEI identifies whether reported emissions are actual, allowable, potential or maximum. If the data submitter does not provide data for this field, the data are assumed to be actual emissions in the NEI. Most of the emissions in the RTR data set are reported as actual emissions. Some emission values are reported as allowable or potential. Table 2 shows the percentage of facilities in RTR categories that did not report emissions as actual.

Table 2. RTR Categories that Did Not Report Emissions as Actual

RTR CATEGORY	% FACILITIES ALLOWABLE EMISSIONS	% FACILITIES POTENTIAL EMISSIONS	% FACILITIES MAXIMUM EMISSIONS
Wool Fiberglass Manufacturing	2.6		
Printing/Publishing (Surface Coating)	0.6		
Aerospace Industries		0.7	
Pharmaceutical Production		0.4	
Flexible Polyurethane Foam Production		1.89	
Decorative Chromium Electroplating			1

Reporting of Pollutants in the NEI

In order to conduct risk assessments as part of RTR, emissions of individual speciated HAPs are needed because the toxicity associated with an individual compound within a compound group can vary significantly. The NEI contains speciated emissions reported by individual species if reported. The CAA lists 188 compounds including 20 compound groups. For these 20 groups, the EPA requests speciated data from NEI data submitters. It is critical that emissions be reported by individual compound for certain key compound groups list in the CAA such as chromium, mercury, and polycyclic organic matter (POM). However, not all emissions are reported by individual pollutant. For chromium and mercury, EPA maintains default speciation files. If chromium emissions are reported as "elemental chromium" or "chromium and compounds", then chromium speciation default profiles are used to speciate emissions into hexavalent and trivalent chromium emissions. If mercury emissions are not reported as elemental gaseous mercury, particulate divalent mercury, and gaseous divalent mercury emissions, then mercury speciation default profiles are used. Emissions by source category are needed in order to use chromium and mercury speciation files.

The file, Toxicity Weighting Factors, provides data and steps for assigning HAPs reported in the NEI to compounds that have dose responses. For POM, NEI HAPs are assigned to 8 different POM groups that will be used in the RTR risk assignments. The first step of assigning HAPs to compounds with dose response values is to extract elemental metal and cyanide from reported metal compounds and cyanide compounds. If chromium is reported as "elemental chromium" or "chromium and compounds" in the NEI, it is speciated using chromium speciation profiles. Then the NEI HAPs are assigned to pollutants (TOX Table CHEMICALS data field in the file) for use in risk assessments.

These default speciation and toxicity weighting factor files can be found at:
http://www.epa.gov/ttn/chief/net/2002inventory.html#documentation.

Emissions
Emissions estimates in the NEI will influence RTR risk assessments. A variety of QA
and data augmentation occurred related to the pollutant emissions in the 2002 NEI. EPA
conducted internal QA/QC of emissions to identify and correct erroneous emissions and
add missing emissions. The internal QA/QC consisted of identifying emission outliers,
missing facilities, and HAPs that should not be reported from facilities in source
categories. EPA's used both Comparative and Statistical methods to QC emissions data
in the NEI. The Comparative QC included an evaluation of significant changes between
the 1999 NEI and 2002 NEI data, and/or extreme variation within the 2002 data. EPA
compared 1999 emission estimates to 2002 estimates by pollutant for each facility, source
category, county, and state. These big picture summaries highlighted source categories,
states, and facilities with potential problems. Statistical QC of the 2002 NEI included
using statistical tables to identify top emitters for each pollutant nationwide, ranking each
facility based on its emissions of each pollutant on a national basis and listing the top
emitters for pollutant/source category combination nationwide.

The draft 2002 NEI was available for a 90 day review and comment period from
February - May 2005. External revisions to the draft were received from industry, tribes,
and state and local agencies. EPA revised the draft 2002 NEI to prepare version 1.0 of the
2002 NEI using data received during internal and external review of the draft.

For more detailed information about QA/QC of NEI emissions data, please refer to the
document, NEI Quality Assurance and Data Augmentation for Point Sources and to the
paper, Reviewing the 2002 NEI Draft for Point Sources, Pope, et al, 2005 Emission
Inventory Conference.

Facility Category
Facilities in the NEI are defined as major or area sources using the CAA definition.
Major sources have the potential to emit 10 tons per year or more of any single HAP or
25 tons per year or more of any combination of HAPs, and area sources emit less 10 tons
per year or more of any single HAP or 25 tons per year or more of any combination of
HAPs. If data submitters do not complete this data field, emissions are designated as
major or area using reported emission values.

Stack Parameters
Stack parameters required for dispersion modeling include the following data fields in the
NEI: stack height, stack diameter, exit gas temperature, exit gas velocity, exit gas flow
rate, and emission release type. In addition, 3 new fields were added to the RTR NEI
data set for fugitive releases: length, width and angle. These 3 values replace the NEI
data field, *Horizontal Area Fugitive*, and are also needed for dispersion modeling of
fugitive emissions.

Extensive QA of stack parameters occurred during the development of the 2002 NEI. QA of stack parameters in the 2002 NEI include the following.

- For all releases, the Emission Release Point Types are evaluated using SCCs and MACT Codes to help prevent stack releases being reported as fugitive releases or fugitive releases being reported as stack releases for processes
- For fugitive releases, the stack height is evaluated. The other 4 parameters are defaulted.
- For stack releases, 3 QA steps are conducted.
    - Stack height and diameter are compared to insure that diameters are not larger than stack heights.
    - Temperatures are evaluated based on SCCs and MACT Codes.
    - Flow rate, diameter and velocity are evaluated to identify calculation errors in flow rate.
    -

The NEI contains Stack Default Flag that indicate if the individual stack parameters are defaulted and the method used to default stack parameters. In the 2002 NEI, more than 75% of records contain one or more defaulted stack parameters.

For more detailed information about QA and augmentation of stack parameters, please refer to the document, NEI Quality Assurance and Data Augmentation for Point Sources and the paper, Truth or Dare: Data Augmentation in the Point Source 2002 NEI, Pope, et al, 2004 Emission Inventory Conference.

Geographical Coordinates
Extensive QA of geographical coordinates also occurred during the development of the 2002 NEI. Geographical coordinates include latitude and longitude. Latitude and longitude are assigned at the individual release point in the NEI rather than at the facility level. Data submitters made a significant effort in improving latitudes and longitudes in the 2002 NEI. The NEI includes the QA of latitudes and longitudes in a two-step process.
1. Geographical coordinates are compared within a facility.
2. All coordinates are plotted using GIS.

The NEI contains Geographical Coordinate Default Flag that indicates if latitude and longitude are defaulted and the method used to default geographical coordinates. Less than 10% of records in the NEI contain defaulted geographical coordinates.

For more detailed information about QA and augmentation of geographical coordinates, please refer to the document, NEI Quality Assurance and Data Augmentation for Point Sources and the paper, Truth or Dare: Data Augmentation in the Point Source 2002 NEI, Pope, et al, 2004 Emission Inventory Conference.

COMPILING THE 2002 NEI FOR USE IN RTR RISK ASSESSMENTS
Preparation of the 2002 NEI for use in the RTR risk assessments included the following steps for each category.
- EPA MACT engineers review version 1 of the 2002 NEI data.

- The Emission Inventory and Assessment Group (EIAG) processes revisions to version 1 of the 2002 NEI and prepares version 3 of the 2002 NEI and RTR NEI files.
- RTR NEI files are posted on RTR website for public review
- The EIAG reviews proposed RTR revisions received during the public review and prepares version 4 of the 2002 NEI.
- The EIAG prepares RTR NEI modeling files.
- RTR modeling files serve as inputs to HEM, AERMOD and TRIM; evaluating these risk results residual risk standards and technology standard revisions are proposed.
- The EIAG evaluates NEI comments received on proposed residual risk standard and revises version 4 of 2002 NEI. These revisions will be considered in final rulemaking.
- Final residual risk standards and technology standard revisions are published.

Review of Version 1 of the 2002 NEI by MACT Engineers
Review of version 1 of the 2002 NEI data for RTR by MACT engineers focused on:
- RTR category assignment,
- Emission revisions, and
- Emission release point revisions.

The review occurred from June – October 2006.

RTR Category Assignment
EPA initially extracted data from version 1 of the 2002 NEI for the RTR using the data field, *MACT Code*. MACT engineers reviewed MACT Code assignments for RTR categories. In their review of MACT Code assignments in the NEI, MACT engineers first reviewed the list of facilities in the NEI associated with their RTR source categories. For some source categories, engineers were reasonably confident that they knew the names of the facilities and their exact locations. In these cases, MACT engineers compared the "known" lists of facilities to the facilities in the RTR NEI data sets. Facilities were removed from the MACT source category assignment in the NEI if they were not on a known list. If facilities on a known list were not in a NEI RTR data set, the NEI was searched for these missing facilities. In most cases, the missing facilities were in the 2002 NEI, but MACT Codes were not assigned for the RTR category. These facilities were added to the data set for the category, and the MACT Code assignments were revised.

For large facilities with multiple processes that represent multiple MACT source categories, it was not always straightforward to separate the processes by source category. In these cases, a variety of approaches using SCCs, SIC and NAICS codes, and pollutants emitted were employed to attempt to separate the processes and emission points within facilities into source categories. For categories with large numbers of facilities that MACT engineers did not have complete lists of known facilities, more general evaluations of the facilities in the RTR NEI data sets were conducted. These evaluations included examining the company names, SIC codes, NAICS codes, and SCCs. Facilities were added or removed based on these criteria.

An example of the MACT Code assignment review by MACT engineers is provided for polyether polyols. The original polyether polyol RTR NEI data set contained 12 plants.

The 12 plants were assigned to this category in the NEI based on 2 SCCs, 30101870 (Chemical Manufacturing; Plastics Production: Reactor for Polyether Resins) and 30101872 (Chemical Manufacturing: Plastics Production: Miscellaneous Polyether Resins). MACT engineers prepared a facility list of 33 polyol plants using information in project files and the SRI Economic Handbook. Of these 12 plants in the original NEI data set, 5 were on the MACT facility list. MACT Codes for polyether polyol were removed from the 7 facilities not on the MACT list. The remaining 28 plants on the MACT list were found in the NEI. However, these 28 facilities did not have any emission points that could be assigned to the specific polyether polyols SCCs. The primary pollutants emitted from polyether polyols are ethylene oxide and propylene oxide. An assumption was made to assign all processes at the facilities with emissions of ethylene oxide and propylene oxide to the RTR category of polyether polyols, with the exception of non-polyether polyol processes such as industrial boilers.

Emission Revisions
MACT engineers reviewed the HAP Emissions Performance Level and Facility Type in RTR NEI data sets. MACT engineers also reviewed the default chromium and mercury speciation profiles for RTR categories. The chromium speciation profile for aerospace was revised based on review of data by MACT engineers and the state of Kansas.

MACT engineers conducted a general review of the emissions and other data included in the RTR data sets to identify large emissions outliers and process-specific errors that could impact future risk assessments. For the following source categories, version 1 of the 2002 NEI was revised with data recently collected by the EPA.
- Petroleum Refineries – benzene data for 23 facilities
- Shipbuilding and Ship Repair – welding, blasting and coating data for 11 facilities
- Chromium electroplating – 3 facilities
- Source categories regulated by the Group I Polymers and Resins MACT - 22 facilities
- Source categories regulated by the Group II Polymers and Resins MACT – 7 facilities
- Secondary Lead – 15 facilities
- Pulp and Paper Production – dioxin data for 4 facilities

NEI emissions were also revised for a few facilities that contained outliers within the following categories.
- Aerospace
- Iron and Steel Foundries
- Pharmaceutical Production
- Portland Cement
- Primary Lead Production
- Secondary Aluminum

State and local agencies and EPA Regional Offices assisted EPA engineers with revising emission estimates.

Emission Release Point Revisions
After MACT engineers completed their review of emissions, they reviewed defaulted geographic coordinates and stack parameters to provide corrections. Revisions to stack parameters and geographic coordinates were only provided for a few of the RTR facilities by MACT engineers. Assistance was provided to MACT engineers by EPA Regional Offices, states and local agencies.

Preparation of Version 3 of the 2002 NEI and RTR files for ANPRM
EIAG processed revisions to version 1 of the 2002 NEI and prepared version 3 of the 2002 NEI. Version 3 of the 2002 NEI includes the following HAP revisions.
- RTR revisions
- Lead revisions
- Hazardous Waste Incineration source test data for all units in the US

EIAG created individual Microsoft Access files for each RTR category using version 3 of the 2002 NEI. The files enable the public to review the 2002 NEI RTR data and to suggest revisions to HAP emissions and other NEI data for all RTR facilities in a single category. The RTR NEI data files contain a subset of NEI data fields. The files contain easy-to-use forms. The files are posted on the Risk and Technology Review, Phase II website at: http://www.epa.gov/ttn/atw/rrisk/ .

Review of RTR NEI data was announced in an ANPRM in the FR. Reviewers have 60 days to comment on the RTR NEI data.

The category-specific files contain emissions data for the facilities identified as belonging to a RTR MACT category covered under the ANPRM. Thus, some of the emissions may be from processes NOT associated with a RTR category. The MACT Code indicates if the HAP pollutant emissions are associated with the RTR MACT category or another MACT category at the facility. Total facility data are provided to show a complete dataset for the facility in order to help reviewers identify additional processes which should be assigned to a RTR MACT category.

Each Microsoft Access RTR NEI file allows reviewers to:
1. View Instructions,
2. View Summary Data,
3. Revise Data and Add New Data,
4. Review Revisions, and
5. Submit revisions.
The Main Page of each file contains buttons to allow users to perform these five activities.

View Summary Data
Reviewers can view RTR NEI summary data at a national, state/county, or facility level. They can also look at all data reported for a facility. Reviewers can sort the columns of data in ascending or descending order, or reviewers may filter data by different data attributes. The available filters change depending upon the detail level of the displayed

data. Reviewers can choose one filter after another to progressively narrow down the data to records of interest. For example, on the state/county level, reviewers can first filter data by state, then by county, and then by pollutant. The filters available on each data level are:

- National Data – Pollutant filter.
- State County MACT Emissions – Pollutant, state, and county filters.
- Facility MACT HAP Emissions – Facility, pollutant, state, county, and MACT code filters.
- All Data – Facility, pollutant, state, county, and MACT code filters.

A description is provided of the data at the 3 summary data levels.

- National summary shows emissions of all pollutants associated with a RTR category at the national level.

- State County summary presents emissions of all pollutants associated with a RTR category at the county level.   This summary allows reviewers to find a county of interest and view emissions by pollutant for the RTR category.

- Facility level summary shows total emissions by pollutant for all processes at all facilities assigned to a RTR category. The MACT Code column in the form indicates if the HAP emissions are associated with the RTR category or another MACT category at the facility. This summary also includes facility information such as address, state and county, or tribe.

- All Data summary shows detailed records for all facilities included in a RTR category. This summary includes process level HAP emissions, SCCs, stack parameters, latitude/longitudes, SIC codes, NAICS codes, and other information.

Revise Data and Add New Data
Reviewers that propose revisions or add new data will need to provide additional documentation to the docket. EPA will not process proposed revisions or additions without accompanying documentation.

When reviewers revise or add new data, they must provide commenter information before they can continue in the database. The contact information includes their name, organization, email address and phone number.

After providing commenter information, reviewers may select a facility for revision or add data to an existing facility. The name of the facility and address information are shown in a selection list for a category. Then reviewers can select one of five actions: Revise Data, Add New Facility, Add Data to an Existing Facility, Export Data to Microsoft Excel, or Return to Main Page. Reviewers can only enter data into the revision fields. The remaining fields are locked and cannot be changed. Each of these options is discussed.

Revise Data – Reviewers can select the specific data attributes to be revised. These attributes include the following.

- *Emission Information* –Emission fields that can be revised in this form include: start date, end date, emissions (tons per year), pollutant code, and HAP emissions performance level (actual, allowable, potential or maximum emissions). If the emissions value is changed, the start date, end date, HAP emissions performance level, and emissions calculation method code must be updated as well. Reviewers can also indicate that the HAP emissions value should be deleted, provide a reason for this deletion, and enter general comments on any revision. If emissions are revised or deleted, reviewers must provided additional documentation for revisions to the docket.

- *Emission Process Information* – Process fields that can be revised in this form include: MACT code and SCC.

- *Stack Information* – Emission release point fields that can be revised are: stack height, stack diameter, exit gas temperature, exit gas velocity, exit gas flow rate, the emission release point type (stack vs. fugitive), fugitive length, fugitive width, fugitive angle, latitude, and longitude.

- *Facility Information* – Facility data fields that can be revised include: tribal code, county name, facility registry identifier (FRS), facility category code (major or area), facility name, location address, city, state, and zip code. Reviewers can also indicate that a facility is closed and when it closed, or indicate that a facility should be removed from the MACT category.

Add Data to an Existing Facility – Reviewers can add data to an existing facility. The current data for the facility will be shown. Reviewers will scroll to the last row to enter any missing pollutant data. Reviewers must provide all data fields for the added records.

Add New Facility –Reviewers can add a new facility to a RTR category and enter all of the HAP emissions and associated descriptive facility and emissions release point information. This information includes: tribal code, county name, facility category code (major or area), facility name, location address, city, state, zip code, SIC code, NAICS code, SCC, MACT code, pollutant, emissions value, stack parameters and latitude/longitude. The reviewer should also enter appropriate identifiers: facility identifier, unit ID, process ID, and emission release point ID. All of the fields except SIC code, NAICS code, fugitive length, fugitive width, and fugitive angle are mandatory. If stack parameters are not provided, then EPA will default them. If reviewers add emissions for processes that are not associated with the RTR category, they should select the appropriate MACT code (from a drop down list) or indicate that it is not a MACT-associated process.

Review Revisions
After reviewers revise or add new data, they can review their suggested revisions in the RTR data base or export their revisions to Microsoft Excel to print and review them.

Revisions may be reviewed at the facility or emissions levels. The data base allows reviewers to view or print out all records at a facility – revised, added and unchanged records. After reviewing records, reviewers can return to <u>Revise Data</u> to make additional revisions or submit their revisions.

Submit Revisions
Upon completion of all additions and corrections, reviewers will need to submit their corrections to EPA's Docket. The reviewers will create a file with revisions and additions by selecting the "Submit Revisions" button that is found on several forms in the data base. The "Submit Revisions" form contains a brief summary of docket instructions, a button labeled "Create Final Revisions File," and a hyperlink to EPA's Federal eRulemaking Portal. Clicking the "Create Final Revisions File" button will create a spreadsheet file that contains the reviewer's changes. In addition to submitting the spreadsheet file with revised RTR NEI data to the docket, reviewers should prepare and submit supporting documentation. Supporting documentation can include: source test reports, permit information and/or computational information such as emission factors and activity data (throughput).

Public Review of RTR files
In the ANPRM, reviewers are requested to comment on the following RTR NEI information.
- Assignment of MACT Codes to processes and emission release points at large integrated facilities.
- Source category representation
  - Missing facilities from the category
  - Facilities that should be removed from the category
- Facility location and identification
  - Facility name
  - Facility address – physical location of facility
  - State and County and Tribal lands of facility
  - Facility Category (major or area source)
- Emission point data
  - SCCs and MACT codes
  - Emission release point type (fugitive, vertical stack, etc.)
  - Stack parameters
  - Geographic coordinates
- Emissions data characteristics
  - Emissions (tons/yr) of each individual pollutant
  - Acute emissions
  - PB-HAP emissions
  - Speciation of metal HAPs and polycyclic organic matter (POM)
  - HAP emissions performance level (e.g., actual, allowable, potential, maximum)
  - Chromium and mercury speciation profiles for processes
  - HAP Emissions Performance Level (actual, allowable, potential, maximum)

Preparing Version 4 of 2002 NEI and Revised RTR NEI
Once the comment period for the ANPRM closes, EIAG will evaluate the public comments and data files received, reconcile differences between public comments and internal comments, obtain additional required supporting information (e.g., verification of proposed changes), and revise the version 3 of the 2002 NEI data. All proposed changes to 2002 NEI data will be evaluated to determine if the proposed revision should be incorporated into version 4 of the 2002 NEI. Factors that will be considered to determine if proposed changes should be incorporated include:
- Source of the underlying NEI data on which comments are received (e.g., industry, State/local/tribal air agencies, EPA engineers, EPA's Toxic Release Inventory, etc.);
- Quality of supporting documentation supplied with the comment (e.g., monitoring method, mass balance calculations, etc.);
- Type of data the comment addresses (e.g. emission quantities, geographic coordinates, stack parameters, MACT code assignments, etc.); and
- Magnitude of requested emission quantity revisions.

All requested changes must pass the NEI QA procedures as described in QA Augmentation Report.

Revisions received from the same source that supplied the version 3 of 2002 NEI data will be incorporated as long as revisions meet the NEI QA process. For example, if a state agency wishes to change an emissions value that they provided to the NEI, the revision will be incorporated. For comments received from different sources than the source of the data in version 3 of the 2002 NEI, the factors listed above will be evaluated to determine if the data will be incorporated into version 4 of the 2002 NEI. EIAG will review the supporting documentation for suggested emission changes, consult with commenters, and contact the original source of the data in version 3 of the 2002 NEI to determine if the comment will be incorporated into the NEI. Most requests for changing data other than emission values (e.g., geographic coordinates, stack parameters, etc.) will be incorporated regardless of the data source as long as there is adequate supporting documentation and the data pass the NEI QA process. EIAG will prepare a file that summarizes all proposed revisions and the resolution to proposed revisions.

EIAG will revise the version 3 of the 2002 NEI with accepted revisions and prepare version 4 of the 2002 NEI. Revised RTR files will be generated from version 4 of the 2002 NEI.

Development of Residual Risk and Technology Review rules
The revised RTR NEI files serve as input to the risk characterization . Results of this characterization will be utilized in the decision making process for residual risk and technology review rules. For each RTR source category, EPA may take several courses of action.
- For categories with acceptable risks, residual risk standards under CAA section 112(f)(2) may not propose emissions controls beyond the existing MACT standard
- For categories with unacceptable risks, residual risk standards under CAA section 112(f)(2) may propose emission controls beyond the MACT standard

- Further all RTR categories regardless of risk, propose and promulgate any will undergo a technology review of the existing MACT standard under section 112(d)(6).

Peer Review of RTR NEI Data
The approach for assessing residual risk for RTR categories is currently undergoing an independent scientific peer review. This peer review is being conducted by a panel of EPA's Science Advisory Board. The peer review of the RTR NEI data focuses on: (1) the source of emissions and other modeling data and the approach for refining this data, (2) the analytical approach for quantifying and characterizing human and environmental exposures and risks, and (3) the types of results that will be generated and the format for the characterization of assessment results.

Peer reviewers were asked to evaluate the NEI development process and respond to the following questions.

1. Short of creating a federal mandate for reporting emissions to the EPA, do the methods by which the NEI was developed, reviewed, and compiled result in a technically-credible database that can support regulatory assessment and action? If not, can you suggest ways to improve it?

2. Do the plans for conducting an engineering review and incorporating currently-available refined emissions and source data into the inventory add value to the assessment? Does the plan for soliciting public comment through an advanced notice of rulemaking add scientific credibility to the inventory? Is the plan for reconciling comments on the inventory adequate? If not, can you suggest other approaches for reconciling such comments?

EPA is expecting results of this review shortly. Further details on the review can be found on the SAB website
http://www.epa.gov/sab/panels/consul_risk_and_tech_assessment_plan.htm

CONCLUSION
The NEI is the starting point for the risk characterization in support of the RTR to determine if residual risk standards are needed to adequately protect human health after the implementation of MACT standards and if revision of existing MACT standards is needed. The RTR process shows that it is important for NEI data partners to improve the data quality of critical data fields in future NEI submittals to support regulatory development. Time and resources could be significantly reduced as well as improved accuracy of estimated risk characterizations for regulatory applications using NEI data if more effort was expended by data submitters in developing their NEI data. The RTR review of the 2002 NEI and the scientific peer review will improve the quality of the 2002 NEI data as well as associated risk estimates from this data, Further, by highlighting the importance of quality emissions data in regulatory rulemaking efforts, the RTR review of the NEI will serve as an impetus for improvement in future inventories.