2002 National Emissions Inventory (NEI) for Point Sources: Integration of HAPs and CAPs

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Overview of Presentation

- Integration Methodology
  - Data Collection
  - QA of Referential Integrity and Format Errors
  - QC and Augmentation of Location Coordinates
  - Data Blending and Merging
  - Augmentation of VOC and PM
  - MACT Assignment
  - Data Rating
  - Summary Files
  - QC and Augmentation of Stack Parameters
- NEI Schedule
- Conclusions

Data Collection

- State, local agency and tribal inventories
- EPA MACT and Residual Risk data
- Industry data submitted to EPA
- 2002 Toxic Release Inventory Data (TRI)
- Utility electric generating units (EGU) data
- 2002 NEI for CAPs - preliminary
- 1999 NEI for HAPs

Goals of 2002 NEI

- Make efficient use of multiple data resources
- Integrate HAPs and CAPs data
- Use updated input formats (NIF 3.0 & XML Schema)
- Provide more feedback to S/L/T earlier on quality of data submitted
- Improve quality of data in the 2002 NEI
- Peer Review methodology and final NEI product

QA of Referential Integrity and Format Errors

- Conduct battery of tests on each file
  - Work with data submitters to resolve issues and errors
  - Track files, communications, corrections using database logs, email, phone log and QA-QC forms
  - Tracking ensures transparency and reproducibility

QC and Augmentation of Location Coordinates

- Good latitude/longitudes needed for air quality modeling
- QC of location coordinates is multi-step process:
  - Verify all emission release points are within 3 km of one another
  - Make sure coordinates are in correct county - use GIS overlay to evaluate each pair
  - Replace bad/missing coordinates

Blend-Merge & the NEI Facility ID

- To merge data from different sources, need a common ID
  - Created a 99 NEI HAP-CAP crosswalk
  - Crosswalk includes locational information, ORIS IDs, and FRS IDs.
- The NEI Facility ID (formerly the NTI Unique ID) is assigned to all “sites” at the same “facility”

Blend-Merge

- Multiple data sources for same facility are combined using selection hierarchy
- Duplicated pollutants from the same facility are deleted
  - For example, if State and TRI provide mercury data for same facility, only state data are retained
  - Check for overlap between specific HAPs and groups (e.g., “Chromium and Compounds, Chromium (VI)”)

Default Data Selection Hierarchy

- State, local agency, tribal organization data
- EPA data (MACT databases)
- TRI
- Industry
- Earlier inventories (e.g., 1999 NEI)

Hierarchy Exceptions - Examples

- EPA's large and small MWC data
- EPA's mercury data for coal-fired utility boilers
- 4,4'-Methylenediphenyl Diisocyanate (MDI) data from trade association
- OSW's haz waste incineration data
- Other data reviewed closely (e.g., pulp and paper, petroleum refineries, plywood manufacture)

Augmentation of PM and VOC

- Compare criteria PM and VOC to VOC-HAP and PM-HAP

- If VOC = 0 and VOC-HAP > 0.
  - Create a new emissions record for “augmented” VOC. Set VOC-aug = VOC-HAP emissions. This assumes all VOC are VOC-HAP.

- If VOC > 0 but < VOC-HAP.
  - If the sum of VOC-HAP are more than 20% greater than reported VOC, then we will compile a list of these facilities with their emissions data for further QC. It is not known at this time if we will be able to resolve the discrepancy.

Augmentation of PM and VOC

- If VOC > VOC-HAP.
  - No action necessary. Assume VOC includes all VOC-HAP emissions, plus additional non-HAP VOCs.

- The procedure for augmenting PM will be similar to the one outlined for VOC. In this case, we will compare HAP-PM emissions to PM-primary (PM-PRI) emissions.

MACT Code Assignment

- MACT code indicates broader source category; individual facility may not be subject to rule
- Assigned at process (SCC) level
- MACT Code assigned using hierarchy:
  - ESD submitted data
  - State submitted data
    - States will know if facility is subject to MACT
  - ESD facility lists
    - Assign code if facility is present and source appears to be present
  - SCC defaults - List provided by ESD
  - SIC defaults - List provided by ESD; revisions made to resolve conflicts

Data Rating

- Will develop simplified rating scheme to assign score to estimates
- Will be a simplified scheme based on:
  - Completeness of data
  - Emission calculation method
  - Age of data
  - Other qualitative information
  - Specificity of data

QC and Augmentation of Stack Parameters

- Evaluate and replace missing, incorrect, or inconsistent parameters associated with fugitive and non-fugitive release points
- For fugitives, if height is outside range, replace all parameters, otherwise keep height and replace all others

QC and Augmentation of Stack Parameters

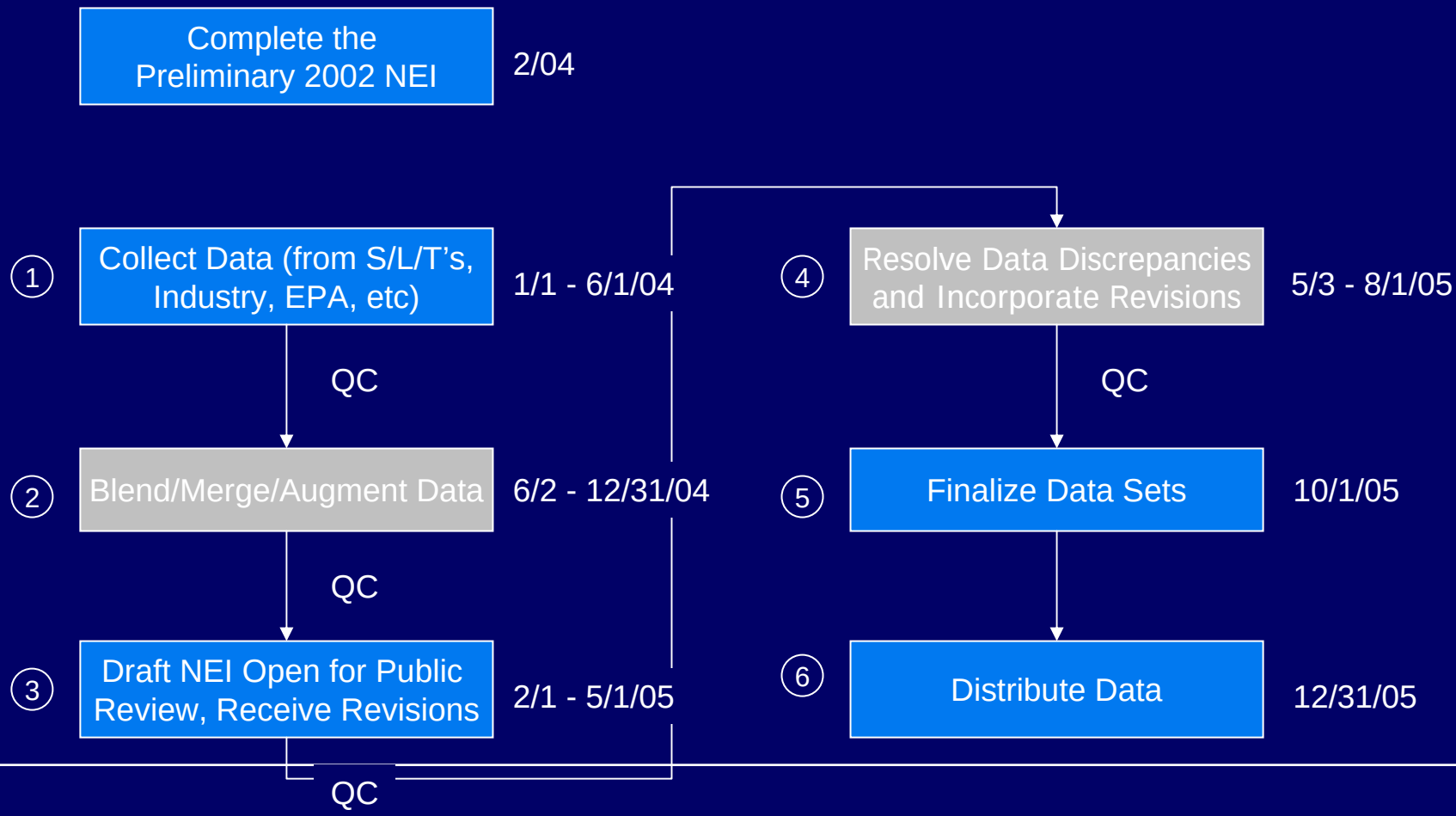
- For non-fugitive parameters
  - Parameters must be complete, fall within prescribed ranges, and be internally consistent
  - Height must be non-null, and less than diameter
  - If fail any one of these tests, replace parameters with SCC, SIC, national defaults and/or calculated values

Schedule for 2002 NEI

- June 1, 2004 – State and other NIF formatted submittals due
- February 1, 2005 – Draft 2002 NEI posted for external review
- May 1, 2005 – Comments due on February Draft
- December 31, 2005 – Final 2002 NEI

Overview of 2002 NEI Plan$_2$

- Major milestones for the 2002 NEI



Conclusions

- Integration is a multi-step process presenting new challenges
- State/local/tribes can assist process by:
  - Supplying addresses, locational coordinates, SIC/NAICs, SCCs, MACT codes
  - Supply additional information to help us interpret your data