Emissions Factor Program Re-engineering Update

Michael Ciolek, Ronald Myers, and Barrett Parker

US EPA

Emissions Factor Re-engineering Update

- Background
- Electronic Reporting Tool (ERT)
- WebFIRE
- Uncertainty Assessment
- Next Steps

How do Emissions Factors (EF) fit in?

- NEI Re-engineering goal
  - Better quality Emissions Inventories
- Better data enable better decisions
- Better decisions translate to emissions reductions
- EFs are one way to provide data

Quantification Hierarchy

- CEMS
- Site Emissions Testing
- Similar Source Data
- Emissions Factors
- Engineering Judgment

Background

- EFPAG got EF program in 2003 and set 3 goals
  - Become more transparent
  - Shift to better monitoring approaches
  - Foster new partnerships

Background

- EFPAG focused on
  - Making the program more responsive
  - Improving the number and quality of EFs
  - Improving EF development
  - Quantifying EF uncertainty
  - Increasing accountability

Background

- Stakeholders said
  - Too few EFs
  - Too long to get EFs in AP-42
  - EFs may be inappropriate for site specific, non-inventory purposes

Background

- EFPAG countered with
  - Means to electronically accept, assess, and transmit data (ERT)
  - Upgrade FIRE to an interactive, real-time internet application (WebFIRE)
  - Way to characterize uncertainty of existing EFs

Background

- Other events have impacts
  - OAQPS reorganization
  - NARSTO assessment of EIs
  - EPA Inspector General review
- EFPAG to new group and division
  - Measurement Policy Group (MPG) in Sector Policies and Programs Division
  - Fewer EF staff and new responsibilities
  - Management remains committed

Background

- NARSTO identified weaknesses
  - QA and QC procedures
  - Uncertainty and data source documentation
  - Inadequately characterized emissions
  - Emissions estimates
    - Based on few, non-representative tests
    - Have poor temporal and spatial resolution
    - Rely on outdated techniques

Background

- IG asked if EFs have acceptable quality to make key decisions
- IG recommended
  - Guidance for non-inventory use
  - Rating system with uncertainty range
  - Partnerships to get new EFs
  - Comprehensive strategic plan

Electronic Reporting Tool (ERT)

- ERT
  - Microsoft access desktop application
  - Provides electronic reporting and recordkeeping for M1 – M5 and M202
- ERT format
  - Highlights info needed to document test methods

ERT

- ERT format (continued)
  - Facilitates test planning and preparation
  - Makes data quality characterization consistent
  - Standardizes test reports
  - Provides for future electronic exchange capability

ERT

- Available at
  - www.epa.gov/ttn/chief/ert/ert_tool.html
- ERT has 3 parts
  - Application
    - Screens, reports, & calculations to create Test Plan and Test Report
  - Project Data Set (PDS)
    - Microsoft access database file that will be exchanged

ERT

- ERT has 3 parts
  - Excel spreadsheet
    - Used to import data electronically or manually in the field or in the office
- ERT workflow
  - Create Test Plan
  - Put Test Plan in PDS
  - Submit Test Plan to agency

ERT

- ERT workflow
  - Await agency approval
  - Revise and resubmit as needed
  - Enter field data in Excel spreadsheet
  - Enter test and process data into PDS
  - Attach supporting documentation

ERT

- ERT workflow
  - Submit PDS file to agency
  - Conduct agency review
- Future versions will incorporate other State and Federal Methods

WebFIRE

- WebFIRE is an internet based Cold Fusion application
  - Combines AP-42 and FIRE
  - www.epa.gov/ttn/chief/efpac/index.html
  - Makes EF changes easier
- Future WebFIRE enhancements
  - Links to source test reports and supporting background information
  - On the fly EF calculations

Uncertainty Assessment

- Conducted statistical analyses of highly-rated EFs
- RTI performed work and will discuss it in the next presentation, but
  - Looked for patterns associated with
    - Source category
    - Pollutant
    - Number of emissions tests
    - Control devices used

Uncertainty Assessment

- Analyses and report subjected to peer review
  - Report language being clarified for non-statisticians
- Report available in summer for public review and comment
- Comments will aid guidance for accounting for EF uncertainty

Uncertainty Assessment

- By fall, discussions will begin on policy options for expressing uncertainty

Next Steps

- MPG continues to strive for
  - Quicker EF turnaround
  - More EFs
  - Accounting for EF uncertainty
- By fall, MPG will have
  - Developed and tested a new EF streamlining process

Next Steps

- By fall, MPG will have
  - Developed EFs for
    - Coke ovens
    - Municipal waste combustors
    - Steel mini-mills
    - Landing losses for external floating roofs
    - Low pressure petroleum storage tanks

Next Steps

- Over the longer term, MPG will aid others in initiating development of EFs for
  - Natural gas engines
  - Rubber manufacturers
  - Animal feeding operations
- Complete process may take years
  - MPG looks forward to full implementation