



Emissions Factors Program Improvements: A Review of the 2009 ANPRM

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Details

- Title: Emissions Factors Program Improvements
- Action: Advanced Notice of Proposed Rulemaking (ANPRM)
- Date: Wednesday, October 14, 2009
- Citation: 74 FR 52723
- CFR Parts Affected: 40 CFR Parts 60, 61, and 63
- Comment Due Date: December 14, 2009*
- Number of Comments Submitted to Date: 93



Goals and Info Requested

- High-Level Goals for Emissions Factors Program:
 - Self- sustaining
 - Produces high quality, timely emissions factors
 - Better indicates accuracy of emissions factors
 - Urges appropriate use of emissions factors
 - Improves emissions quantification
- General Categories of Feedback Desired:
 - How are emissions factors developed?
 - How are they used currently?
 - How can they be improved?



Background

- EFs originally used for estimating emissions for developing national emissions inventories
- Inventories used for air quality management decisions & emissions control strategies
- Now used for many other air pollution control activities:
 - Determining site-specific applicability of regulations
 - Establishing emissions limits in operating permits
 - Assessing risk
 - Other air pollution control activities



Drivers for Change

- Multiple databases with different emissions factors
- AP-42 not the only collection of emissions factors
- Other EF databases exist; contain EFs developed by other programs
 - EPA Office of Research and Development's SPECIATE database
 - EPA Office of Atmospheric Programs issued EFs as part of GHG reporting proposed rule



Drivers for Change

- Public Stakeholders, National Academy of Sciences, EPA Office of Inspector General agree that:
 - Continued maintenance of AP-42 factors info compilation & retrieval system is necessary; also must improve program to support other uses
 - EPA takes too long to develop EFs
 - Data submitted for regulation development not used to develop new EFs
 - Inappropriate use of EFs has occurred
 - In general, EPA not developing new EFs; should be developing & updating regularly
 - EPA should quantify uncertainty
 - Shipyard perspective: EFs not representative of actual process emissions



Four Focus Areas for Improvement

1. Process for developing & improving EFs must :
 - Be easier,
 - Allow effective public participation,
 - Be open and transparent,
 - Accommodate continuing D&I (not large, one-time effort),
 - Provide for electronic test report submittal & review.
2. Improve methods for compiling & providing EF data to users
3. Develop guidance on:
 - Application of EPA's default EF or selection of more appropriate EF for specific applications
 - Calculating EFs from available data
 - Conducting emissions tests to develop new EFs
 - Evaluating data quality
4. Update existing EFs & develop new EFs where gaps exist (*shipyards*)



Process for Improvement

1. Further development of Electronic Reporting Tool (ERT)
 - MS Access application; alternative to paper
2. Upgrade AP-42 factors info system into WebFIRE (Web-based Factor Information Retrieval Data System)
 - Application that compiles & retrieves EFs & performance test data
3. Rewrite existing EF development procedures to make process easier and more transparent
4. May require industry to electronically submit certain performance test data to OAQPS to ensure adequate data exists for D&I of EFs

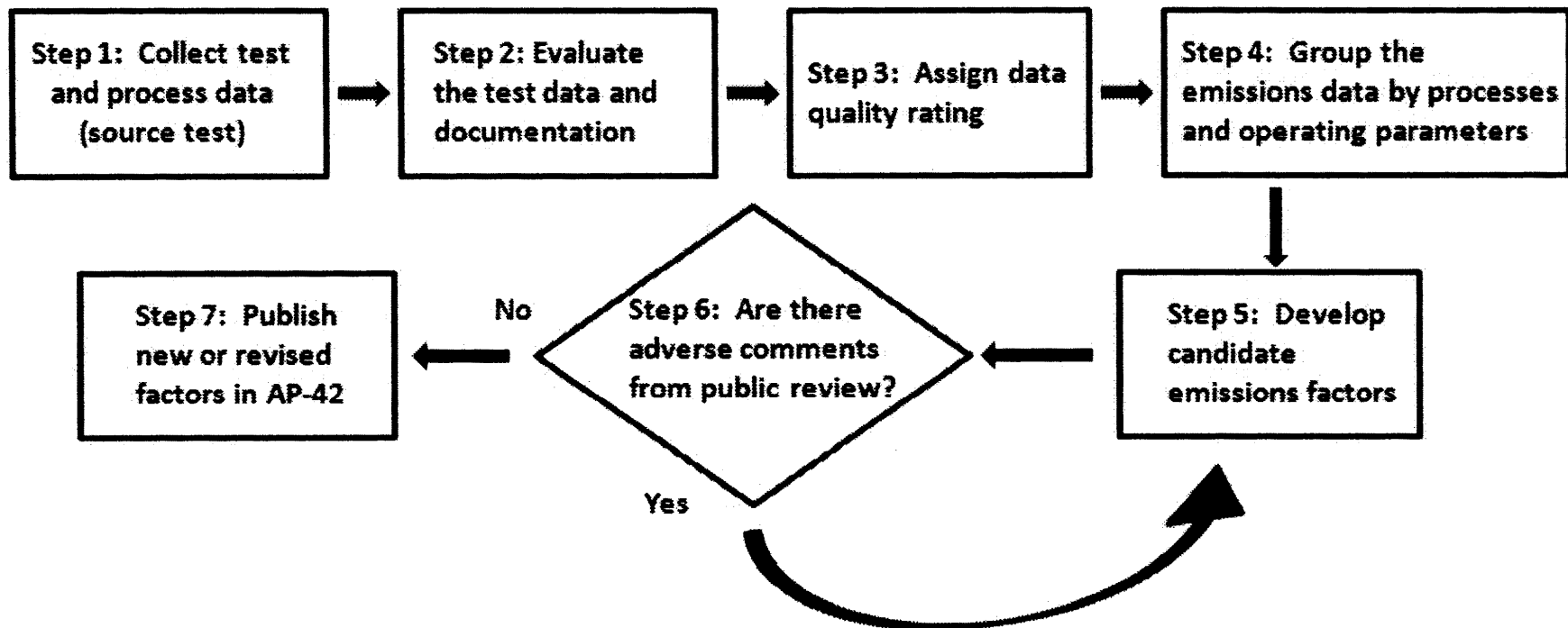


Specific Goals for EF Program

- Change role of OAQPS:
- From sole developer → facilitator
 - Provide tools and oversight rather than resource-intensive in-house EF development
 - To meet goal, EPA wants:
 - Stakeholder submission of site-specific process & testing info
 - Electronic documentation & transfer of info
- Replace subjective, manual method of updating EFs with more objective, automated method
 - Updating guidance on EF preparation procedures to improve clarity and predictive accuracy



Old Manual EF Development Process



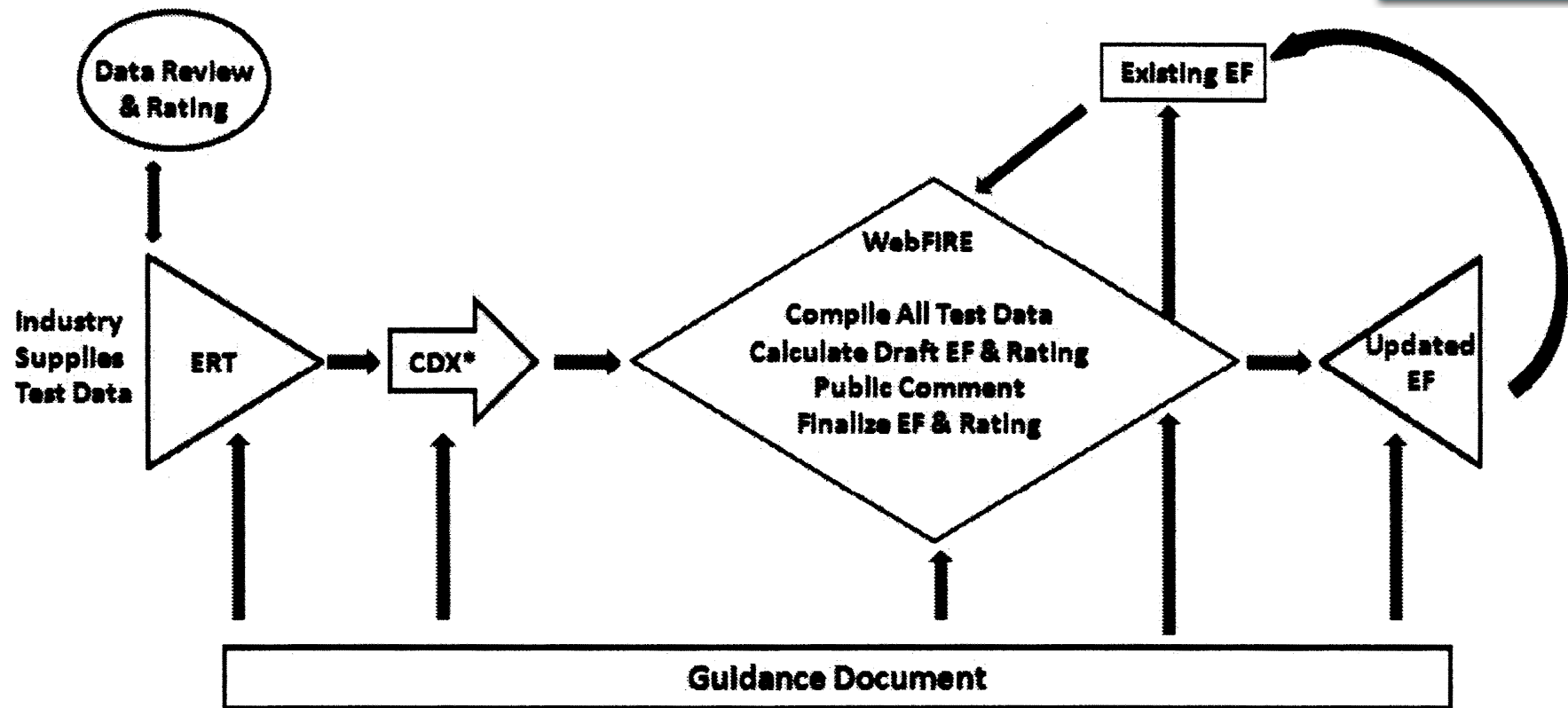


Movement to New EF Process

- Update and revise:
 - **WebFIRE** – Web-based Factor Information Retrieval Data System
 - Combine with:
 - Separate database with complete test reports and other references
 - AP-42 section background reports (test reports, quality ratings)
 - **ERT** – Electronic Reporting Tool
 - Alternative to labor & time- intensive paper test plans, reports, etc.
 - Can standardize info; calculate EF; export EF & data to WebFIRE
 - **Emissions Factors Guidance Document**
 - Title: “Procedures for Preparing Emissions Factors”
 - Describes procedures, technical criteria, & specifications for developing & reporting EFs for publication in AP-42
 - Also includes EF background info, terminology, test methods, etc.



New EF Development Process





Aspects of New EF System

- Source test data compiled electronically via ERT or other electronic format by source submitting data
 - EPA spreadsheet template to be used by sources not using ERT
 - Comment: Other suitable electronic formats? State/Local versions?
 - Comment: ERT report standardization – cause problems with S/L reports? Different electronic system? Still require paper reports?
- Third-party reviews of source tests encouraged
 - State/Local regulatory agencies, independent contractors
 - Comment: How to encourage?
 - Comment: Weight to give 3rd party reviews in assigning EF quality ratings?
 - EPA to conduct audits of certain tests to ensure quality



Aspects of New EF System

- Source Test Quality Ratings
 - ERT (or other e-system) to be modified to provide quality rating for individual tests
 - Comment: What features should system have for assigning quality ratings?
- Source test data then transferred to EPA's Central Data Exchange (CDX)
 - CDX - point of entry on Environmental Information Exchange Network for environmental data exchanges to EPA
 - Source test data received through CDX to be stored in WebFIRE
 - Comment: Should data be transferred to other systems (TRI, National Emissions Inventory, Title V reporting)?



Aspects of New EF System

- EF Quality Ratings

- EPA to add decision criteria to WebFIRE to select most appropriate test data for use in EF update
 - Comment: Should low quality data be used if high quality data exists?
 - Comment: Drop low quality data at some point?
 - Comment: Average all data or assign greater weight to high quality?
- WebFIRE to be revised to assign EF quality rating based on specified criteria
 - Comment: Which criteria (quality of test data, is factor representative of source?, etc.) should be used?
 - Comment: What weight given to criteria?
 - Comment: Should criteria be more standardized in WebFIRE system?



Aspects of New EF System

- Frequency of EF Updates
 - Too frequent updates would cause regulatory uncertainty
 - EPA wants periodic updates on specific calendar schedule
 - No more than annually, unless
 - Certain volume of data is submitted?
 - New data results in significant changes to EF?
 - Comment: Frequency and scheduling of EF updates?
 - EF updates would still be subject to public review and comment procedures through WebFIRE
 - Will update WebFIRE so subscribers are automatically notified of new proposed EFs



Aspects of New EF System

- Groupings – how will WebFIRE group emissions data to develop average EFs?
 - Source category, process type, representativeness of source, emission source, equipment design, operating conditions, raw material or fuel characteristics, control devices, test method used? Some combination?
- Data from non-EPA reference methods
 - ASTM, California Air Resources Board (CARB), etc.
 - Comment: How should WebFIRE assess data from these sources?
 - Comment: Should all test methods be included in WebFIRE?



Aspects of New EF System

- Test Data Submittal Requirements

- Quality and quantity of data currently lacking
- Results in EFs that are out-dated or not representative of source category
- EPA may use authority under Clean Air Act section 114 to require electronic submission of performance test reports conducted for compliance certifications or other regulatory uses
 - Would amend General Provisions of 40 CFR part 60 (New Source Performance Standards (NSPS)), part 61 (National Emission Standards for Hazardous Air Pollutants (NESHAP)), and part 63 (Maximum Achievable Control Technology (MACT standards))
 - Would not add any additional performance testing requirements
 - Benefits: standardization of data & submittal method, save time & money
- Comment: Should source & testing data be *required* to be submitted to the ERT?



Aspects of New EF System

- Emissions Factors Content & Format
 - Currently expressed as arithmetic mean
 - WebFIRE could be modified to calculate other statistical formats
 - Comment: What type & format of EF info, other than mean value, would be useful for stakeholders?
- Interaction with SPECIATE Database
 - DB for total organic compound (TOC) & particulate matter (PM) speciation profiles for emissions from stationary & mobile sources
 - Provides EFs & pollutant info in greater detail than AP-42
 - Comment: Should SPECIATE (or other source of EFs) be linked to or contained in WebFIRE



DoD Comments on ANPRM

- Submitted by Clean Air Act Services Steering Committee on behalf of Navy, AF, Army, other DoD
- Generally supportive of EPA EF improvement efforts
- Fourteen specific comments
- Focus areas of comments:
 - Evaluation of quality of performance test data used for emissions factors development
 - Availability of background information in database used for emissions factors



Specific DoD Comments

- Do more to encourage/ease public participation by creating more clearly defined process
- Use EFs for purposes other than estimating emissions for developing national emissions inventories when EFs meet data quality requirements; e.g., permitting, TRI reporting
- Number of source test reports from a particular source category should not be limited
- Data other than site-specific monitoring data should continue to be accepted for EF calculations; e.g., data generated in simulations or other small scale lab experiments, extrapolated data
- DoD in favor of Web-based standardized process



Specific DoD Comments

- Improved interconnectivity between EPA databases needed
- No undocumented emissions data should enter CDX & WebFIRE; test methods and/or deviations should be included
- Database should include all data (including low quality) as long as accuracy & precision known & documented
- Third party review should ensure statistically sound accuracy & precision determinations, but should not directly impact quality ratings
- No specific schedule for updating EFs needed; dependent on new data or test methods



Summary

- ANPRM – relatively open-ended request for input & guidance
 - Make process more open & collaborative; facilitate not dictate
 - Allow for continuous development & improvement of EFs
 - Use electronic resources to standardize & streamline
 - Push for greater data quantity & quality
 - Revise & update guidance
- Past deadline, but comments still welcome
- Proposed Rule currently scheduled for August 2010 release



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