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Improving EPA's Emissions Factors Program

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ABSTRACT

This paper discusses EPA's ongoing efforts to improve our process for developing emissions factors. Emissions factors are representative values that relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. Ideally, all emissions data would be collected by continuous emissions monitoring with no need for emissions factors. However, measurement via instruments is sometimes not feasible or too costly. Emissions factors were originally established to fill data gaps when developing emissions inventories only. However, emissions factors are now used for a variety of air pollution activities including establishing permit limits.

EPA published an ANPRM in October 2009 seeking comments on proposed approaches to improve emissions factors development. Our goal is to develop a self-sustaining emissions factors program that produces high quality emissions factors more quickly, better indicates the precision and accuracy of emissions factors, streamlines the emissions factors development process, encourages the appropriate use of emissions factors, and ultimately improves emissions quantification.

To meet this goal, EPA is transitioning from AP-42 to WebFIRE and developing a process for electronic submission of test reports. WebFIRE is the online repository for EPA emissions factors data and the web version of the FIRE database EPA is also clarifying the steps needed for developing emissions factors in a procedures manual that also discusses topics such as ranking of emissions factors, use of measurements "below detection limits", and how we will handle outliers. We are also planning to make adjustments to the source classification code (SCC) system and to establish a process for assigning new SCCs. We are also considering requiring the electronic submission of all performance tests, required by parts 60, 61, and 63 (these are the New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP), to be submitted to EPA.

INTRODUCTION

Quantifying air emissions is a vital aspect of all air pollution programs and emissions factors have an important role in these quantifications. Emissions factors have long been a fundamental tool in developing national, regional, state, and local emissions inventories for air quality management decisions and in developing emissions control strategies. Emissions factors have also been critical for determining emissions for developing regulations, risk analyses, and permitting. EPA has been criticized for having many poor and/or out-of-date emissions factors, so we have undertaken a project to improve the emissions factors program.

An emissions factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. These factors are usually expressed as the mass of pollutant divided by a unit mass, volume, distance, or duration of the activity emitting the pollutant (e.g., kilograms of particulate emitted per megagram of coal burned). Such factors facilitate estimation of emissions from various sources of air pollution. In most cases, these factors are simply averages of all available data of acceptable quality that were collected through source performance testing, and are generally assumed to be representative of population averages for all facilities in the source category.

The EPA-approved emissions factors are contained in an online document called the “AP-42 Compilation of Air Pollutant Emissions Factors" (hereafter referred to as “AP-42") available at http://www.epa.gov/ttn/chief/ap42/index.html. The document is currently organized into 15 chapters that describe industrial emission sources and the derivation of industry-specific emissions factors. Many of the individual sections of this document are supported by an associated background report providing summaries of the individual test data and a corresponding assigned quality rating, the rationale for grouping and using individual data, and the assignment of the factor and factor quality.

Under ideal circumstances, all emissions from ongoing operations would be quantified with continuous emissions monitoring, periodic emissions performance testing, or frequent calculation using well-accepted engineering principles, such as mass balances or other detailed engineering calculations. Because these methods can be time and resource intensive or not feasible, users may be unable to secure data sufficient to allow detailed site-specific emissions determinations. Without such data, emissions factors, which are assumed to be representative of population-average values, are frequently used, along with production information as a quick, low-cost method to estimate emissions.

Although we did not intend for emissions factors to be used for any purposes other than emissions inventory development “gap filling”, they have been applied in determining site-specific applicability and emissions limitations in operating permits and many other air pollution control activities by federal agencies, state, local, and tribal air pollution control agencies (S/L/Ts), environmental consultants, and industry. These users have requested guidance on the use of emissions factors and other emissions quantification tools (e.g., emissions testing and monitoring, mass balance techniques) in developing permits that are more practical in their enforcement.

Thus, it is important that EPA continue to support and maintain a vibrant emissions factors program. As a first step, we decided to evaluate the program to determine what was working and what was not working with the program. We talked to many stakeholders to get their perspectives on the status of the program and determined what was needed to improve the program. In addition, we received comments from the EPA's Office of Inspector General and the National Academy of Sciences regarding the need for a strong EPA-run emissions factors program. To that end, we have several projects underway to improve the process of developing and improving their quality. These projects include developing the Electronic Reporting Tool (ERT) to facilitate the submittal of performance test data, developing a web-based platform called WebFIRE for compilation and retrieval, and updating the Emissions Factors Procedures Manual which will include information such as how to submit performance test data, what is expected in the submission of these data, outlier identification, etc. To supply the information needed to keep emissions factors up-to-date, we are also currently planning to propose a rule requiring the electronic submission of performance tests to EPA's Office of Air Quality Planning and Standards (OAQPS). We published our plans and ideas for improving the emissions factors program, while at the same time seeking input and comment from stakeholders in our October 2009 Advanced Notice of Proposed Rulemaking (ANPRM).

At this time, EPA also plans to use the information and data garnered from the performance tests for other purposes including regulation development, risk analyses, rule effectiveness determinations, and other uses. In addition to requiring the submittal of performance tests, we are considering requiring the submission of other pertinent data, such as excess emissions reports and compliance status reports, to aid in regulation development, risk analyses, and for other air pollution control activities.

This paper is organized as follows: The Introduction contains the background information on the emissions factors program including why they are used to quantify emissions, the AP-42 compilation of emissions factors, the transition from AP-42 to WebFIRE, and the reasons and proposed steps for upcoming changes to the program. The discussion or "body" contains a more detailed description of the four major components of the revisions to the program including WebFIRE, revised Emissions Factors Development Procedures Document, Electronic Reporting Tool, and the potential rulemaking to require submittal of performance tests and other pertinent data to EPA. The discussion section also contains a description of the revised process for developing emissions factors and the submittal of performance test data to EPA.

DISCUSSION (BODY)

After conducting an assessment of the program and receiving comments from stakeholders, including the Inspector General and the National Academy of Sciences, that indicated a need to update and streamline the emissions factors program, we decided to update the emissions factors development process to address the concerns of these stakeholders. First and foremost, stakeholders (industry, S/L/Ts, other EPA program offices, environmental action groups, and others) indicated that EPA needs to continue to maintain the AP-42 factors information compilation and retrieval system. In addition, they stated that it takes EPA too long to develop emissions factors, that data submitted for regulatory development have not been used to develop new emissions factors, that there have been several inappropriate uses for emissions factors, and

that, in general, EPA is not developing new emissions factors. The stakeholders said that EPA should develop criteria to address the development and uses of emissions factors for purposes other than just emissions inventory development, such as for use as screening tools for compliance determinations, applicability purposes, and preparing air program permit applications. They also said that the current program is unresponsive to their needs, too complex for their active participation, and lacks transparency concerning data manipulation. Stakeholders also noted that EPA should quantify uncertainty to improve emissions factors and that EPA should be developing and updating emissions factors regularly.

Our plan has been to implement a multi-part process to improve the emissions factors program. The first part involves further development of the electronic reporting tool (ERT) to make it easier for S/L/Ts, industry, and other stakeholders to plan, document, accept, assess, and transmit emissions test data. We are planning on requiring its use in upcoming rules. The second part involves upgrading the AP-42 factors information system to transition into WebFIRE. WebFIRE is an Internet-based application that compiles and retrieves emissions factors and performance test data and information; making it an interactive, up-to-date, and easy to expand and enhance replacement for the current AP-42. Additionally, to make the emissions factors development process easier and more transparent, EPA plans to rewrite the existing emissions factors development procedures and reissue the revised document following a public review and comment process. Finally, in order to acquire adequate data for the development or improvement of the emissions factors, we are considering requiring the submission of certain performance testing information by industry to EPA's OAQPS via electronic reporting.

We believe this multi-part effort will result in a self-sustaining emissions factors program receiving ongoing data submittals to improve emissions estimation for regulatory authorities and others to use in: (1) Developing emissions inventories, (2) updating emissions standards, (3) identifying and evaluating control strategies, (4) determining applicability of permit and regulatory requirements, (5) assessing risks, and (6) conducting other air pollution control activities. We believe this effort will reduce the burden of handling test data, while improving access to and the utility of the data.

One of our primary goals for improving the emissions factors program is changing the role of OAQPS from sole developer of emissions factors to a facilitator who provides stakeholders with the tools to participate in all aspects of the process, generates tools that capture the existing work performed by stakeholders in a way that enhances consistency across the program, audits and oversees the program, and develops policies for the appropriate use of emissions factors in non-inventory applications where there are no policies or where existing policies are inadequate. To this end, we want to encourage collection and submission of critical site-specific process and testing information that will allow stakeholders to improve the predictive accuracy of emissions factors and characterize the associated uncertainties. We also want to encourage and facilitate the electronic documentation and transfer of source test information to reduce stakeholder workload, ease assessment of the performance tests and resultant data, increase communications, establish consistency (content and assessment), increase the transparency of the entire program, and provide information transfer to critical air programs. We also plan to replace the highly subjective manual method of updating all emissions factors for a source category with a more consistent, objective, and automated system that better delineates source descriptions so that

emissions factors' source categories are more meaningful and useful. Guidance is a critical part of developing emissions factors. As such, we plan to update guidance of procedures for preparing emissions factors to make the procedures clearer, improve the predictive accuracy of the resulting emissions factors, improve stakeholders' confidence in the revised process, and help us achieve our overall goals of improving the emissions factors program.

In the ANPRM, we proposed to move from the present subjective resource intensive system where EPA relies on a relatively open-ended set of criteria to make major decisions such as the test data and factor quality ratings to one that is objective (more science based) and designed to reduce the variability associated with manual emissions factor development. The new system will provide an objective evaluation scheme for grading the quality of each emissions test, as well. Also in the ANPRM, we discussed the four major steps (discussed below) we plan to take to implement the improvements in the emissions factors development process.

WebFIRE

As mentioned above, we are transitioning from AP-42 to WebFIRE (see http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main). WebFIRE is the Internet version of the Factor Information Retrieval (FIRE) Data System software application database. WebFIRE contains EPA's recommended emission estimation factors for criteria and hazardous air pollutants obtained from AP-42, Locating and Estimating (L&E) documents, and other documents. We intend for the WebFIRE tool to contain individual data values used to develop recommended factors based on descriptive information such the source classification code (SCC), control device, and pollutant combination. We also plan to have the WebFIRE database contain a single EPA-recommended value (factor) for a particular source classification code (SCC), control, and pollutant combination. However, since all the data will be available, we plan to allow users to choose the data they may believe is more pertinent to their type of source to generate their own customized emissions factors. Note that EPA does not plan to support or store customized emissions factors. We are planning on designing WebFIRE to allow users to conduct simple or detailed searches for emissions factors by process, control device, and/or pollutant. We also currently plan to allow users to access the complete test reports and other references cited in the section and background report.

For many current AP-42 sections there is a background report containing summaries of the contents of the supporting test reports, assessments of the quality of these test reports, judgments on the combining and separation of reports for averaging, and the final assessment of the quality rating assigned to the final factor. We are designing WebFIRE to potentially allow users to conduct simple or detailed searches for emission factors by process type (SCC), control device type, pollutant, and other criteria, and will identify all system test data that conform to the search criteria for the purpose of allowing users to select and create a user-specified emissions factor. WebFIRE will also allow users to examine the background information supporting each EPA emissions factor, WebFIRE provides a convenient forum for public participation and data review by making all data available online. We are also considering adding corollary information for emissions factors such as other statistical and distribution characteristics, such as the standard deviation and range of data values. We believe data like these would be helpful and give users a better understanding of the potential accuracy of the emissions factor. Commenters to the

ANPRM noted that they believed adding these statistics would be beneficial to those using WebFIRE. We plan to modify WebFIRE to connect all of these new and revised components to provide stakeholders with improved access and management capabilities.

Electronic Reporting Tool (ERT)

In order to streamline the collection and submittal of performance test data, while at the same time ensuring the completeness of data collection, we created the ERT. The current version of the ERT is available at http://www.epa.gov/ttn/chief/ert/ert_tool.html. The ERT is a Microsoft Access desktop application that provides an electronic alternative to the submittal of paper test plans, reports, and evaluations. Currently, data collected using many of EPA's emissions measurement methods for stationary sources can be handled by the ERT. The ERT supplements the time-intensive manual preparation and transcription of stationary source emissions test plans and reports for emissions sources testing with an electronic alternative where the resulting data can be transmitted more easily and quickly to the Agency and S/L/Ts who choose to use this system.

The ERT provides a format and a process that: (1) Documents the key information and procedures required by the existing EPA Federal Test Methods; (2) facilitates coordination among the source, the test contractor, and the regulatory agency in planning and preparing for the emissions test; (3) provides for consistent criteria to characterize quantitatively the quality of the data collected during the emissions test; (4) standardizes the form and content of test reports; and (5) we plan to set up the ERT to export the test information and associated data to WebFIRE. We expect the ERT to significantly reduce the monitoring and testing burden for testers, source owners or operators, S/L/Ts, EPA, and other interested stakeholders in collecting, reviewing, storing, and accessing test data and reports.

During the Boiler MACT and Electric Utility MACT information collection request efforts (ICRs), some problems with the ERT were noted. We have addressed many of these issues and subsequently revised the ERT. We continue to work closely with users to address the additional issues. We plan to continue to add other methods, not yet supported by the ERT, to the ERT. We are also updating the ERT to include other amenities, such as easily providing a template for additional testing at the same source, and flagging missing performance test information and data.

Emissions Factors Development Guidance

We are in the process of developing guidance (tentatively titled “Guidance on the Recommended Procedures for Development of Emissions Factors and Use of the WebFIRE Emissions Factor Database”) to assist users in the emissions factors development process. We previously posted a revised procedures document in 2006 (“Procedures for Preparing Emissions Factors” (EPA 454/R 95 015) for public review and comment. Based on the comments we received, the document was withdrawn and never finalized. The document currently planned is intended for use by all stakeholders of emissions factors and will describe the procedures, technical criteria,

and standards and specifications for developing and reporting air pollutant emissions factors or equations for publication in AP-42/WebFIRE.

For the emissions factors program, we are considering the use of statistical approaches for:

- identifying outliers,
- handling test data below method detection limits,
- determining valid data combinations (number of values, average of the values and variance of the values to represent a data set for computational purposes),
- determining data quality characterization, and
- determining individual test report quality ratings.

The procedures document will also include background information on emissions factors and their uses and limitations (for example, use of emissions factors for non-inventory purposes). It will describe the pollutant terminology used in AP-42 and discuss some of the emissions test methods used to measure these pollutants. In addition, the guidance document will include the procedures for initiating revisions to emissions factors and the procedures for public participation in the emissions factors development process.

Requiring Submittal of Performance Tests Rulemaking

In order to ensure we receive timely submittal of data necessary for use in rulemakings and other air pollution control activities and to ensure a robust emissions factors program, we are considering rulemaking to require the electronic submission to EPA of performance test reports. Specifically, we are considering amending the reporting provisions of the 40 CFR parts 60 (New Source Performance Standards (NSPS)), 61 (National Emission Standards for Hazardous Air Pollutants (NESHAP)), and 63 (Maximum Achievable Control Technology (MACT standards)) General Provisions to require electronic submittal of performance tests that are already required by standards in these parts. We want to emphasize that we believe this approach would not add any additional performance testing. We believe that this requirement would not significantly increase the reporting and recordkeeping burden of sources that are already required to submit their performance test data to a regulatory agency. As described below, we think that using the ERT will likely result in reducing the overall burden of submitting test data by standardizing the reporting form and automating many of the quality assurance and calculation features associated with paper reporting.

Further, we believe that obtaining these test data already collected for other purposes and using them in the emissions factors development program will save industry, S/L/Ts, and EPA time and money. A benefit of submitting these data to WebFIRE electronically is that these data will greatly improve the overall quality of the existing and new emissions factors by supplementing the pool of emissions tests data upon which the emission factor is based and by ensuring that data are more representative of current industry operational procedures. Submitting these data to EPA will address a common complaint we hear from industry and regulators that emissions factors are out-dated and/or not representative of a particular source category. We also believe that having these data will enable EPA to conduct more effective residual risk analyses (required under section 112(f) of the Clean Air Act Amendments of 1990) and periodical technology reviews for parts 60 and 63 NSPS and MACTs respectively, without requiring industry to submit

additional data. Moreover, as each source category emissions' factors are populated with more high-quality tests, the accuracy of the emissions factors will increase. The regulations at 40 CFR parts 60, 61, and 63, the NSPS, NESHAP, and MACTs already have performance test requirements and, again, this rule would not add additional testing. Hundreds of these performance tests are conducted each year and the resultant test reports and pertinent data reside in S/L/Ts' filing cabinets.

There are some issues with the required electronic submittal of performance tests or other information to EPA. For example, there are some source categories with numerous sources and frequent testing requirements. In some cases, this might result in hundreds of submittals for the same category which may result little improvement in rating or quality of the emissions factors. However, as stated earlier, in some cases we plan to use these data for purposes other than emissions factors development, so we are considering requiring all the performance tests from sources regulated by parts 60, 61, and 63 to be submitted to EPA electronically.

As mentioned above, we are considering requirements to have sources provide additional information (similar to those data required in ICRs), such as process operations, control device design, and monitoring parameters that are indicative of the emissions performance of the process and control device, to EPA. We are also considering expanding this rulemaking to include the electronic submittal of other information (again, for the most part, already required by existing rules), such as excess emissions reports or compliance status reports. We believe that receiving data such as those included in the excess emissions' reports would be beneficial in developing regulations, conducting rule effectiveness studies, doing risk analyses, and a variety of other air pollution control activities. We are collaborating with others at OAQPS, EPA's Office of Enforcement and Compliance Assurance (OECA) and EPA Regional Offices to determine what other data and information should be submitted.

Revisions to the Emissions Factors Development Process: Overview and Issues

As described above, we are moving from a relatively static format for emissions factors development to one that is more user friendly, flexible, and transparent. We are developing a process that may be more prescriptive, yet will provide users with the flexibility to derive factors that are more suitable for their specific intended purpose. This process will provide source owners or operators with the tools they need to aid in the development of emissions factors. These tools will also provide users the ability to assess the quality and uncertainty of emissions test data. These tools should reduce real or perceived barriers to emissions factors development and result in a substantially improved emissions factors development process.

If we require (through rulemaking) that performance test data be submitted to EPA, then we currently plan on requiring these data to be compiled and submitted electronically in the ERT (or another electronic format in isolated cases) by the source. Because the ERT does not yet support all test methods and because some users may prefer to use a different format, the ERT provides a spreadsheet template that is to be used to submit performance test reports. See http://www.epa.gov/ttn/chief/ert/ert_tool.html for a copy of the current version of the spreadsheet. The source will enter their test plan information into ERT and a file will be established. The owner or operator of the source or their contractor will conduct the performance

testing and enter the field data and pertinent quality assurance data into the ERT. As the ERT has been used more frequently, we have received complaints about the process. One of the complaints received from stack sampling firms, using the ERT, is their having to enter the basic source information, such as source location, stack particulars, etc., for each test. In response to these comments, we have clarified how a template for each source can be established. We are working to further clarify how to make templates for particular sources. In response to other comments, we are working on the ERT to provide a transitional excel form that would allow stack testers to transfer the field data from their existing forms into ERT more easily. We are also working on a similar form that would allow laboratories conducting analyses for performance tests to transfer their results into ERT more easily. We are working on several other issues to ease the transition from paper copy reporting into electronic submission of performance test reports.

After the data are entered into the ERT, there will be an audit function that will notify those entering the data and information where data entry fields are blank. After the data entry person has determined that the form is complete (or as complete as it can be), the ERT forms can be submitted to a "third party reviewer". We believe that an additional review by an objective third party will improve the performance test submittals and resultant data. Field evaluations and source test assessments performed by S/L/Ts improve the reliability of the test data. For example, such assessments will help to ensure testing requirements are met, the test plan was followed, and results were accurately recorded while also minimizing sample recovery/handling errors and equipment errors. We want to encourage this type of third party review of all source tests. Ideally the S/L/T would use the tools and criteria we provide to conduct this review, but in some cases acceptable reviews might be provided by independent contractors or others with an interest in developing or revising certain emissions factors. Well conducted and documented source tests that have been subject to such review can potentially receive a higher quality rating than tests that have not been reviewed.

Although we encourage independent "third party" reviews, they will not be required. However, the test quality rating assigned to these tests will be less than those with third party reviews. Even in the absence of quality reviews for a test, there will be broader quality assurance provisions in the new emissions factors development process. EPA plans to conduct audits of selected tests to ensure their quality as part of the overall program. In addition, we will retain the public review and comment features of the existing system to provide additional assurance that tests submitted to the system are assigned an appropriate quality rating. However, we do not intend to make this process a formal rulemaking process.

Under the current performance test evaluation system, test data quality is rated A through D, with A-ratings assigned to well-documented tests performed by using an EPA reference test method, or when not applicable, a sound methodology that is well-documented. At the other end of the spectrum, a D-rated test is based on test reports with minimal documentation or where a generally unacceptable method was employed. Specific criteria that are considered in assigning the test report quality ratings include source operation (e.g., whether the source was conducting the test under representative operating conditions), test method and sampling procedures, process information (extent to which process variation explains variation in test runs), and documentation of the analysis and calculations. After assigning a preliminary emission data

quality rating based on these criteria, the quality of other pertinent information, such as production data, will be considered. Test data that include the collection of production or process data during the test are rated at a higher level than tests that do not include production data.

In the process we are considering, the ERT or alternative electronic format would be modified to provide a numerical rating for the quality of the individual test based on specified algorithms and data quality objectives. The very process of using the ERT will address many of the rating issues described above by requiring or, at least, encouraging submittal of the information needed for a higher or better rated factor.

We are currently planning to have ERT performance test data submitted by the source to EPA through EPA's Central Data Exchange (CDX) (see http://www.epa.gov/cdx/) which is the point of entry on the Environmental Information Exchange Network (Exchange Network) for environmental data exchanges to the Agency. Users will need to apply to the CDX to be allowed to enter their performance test data into the CDX. The CDX may also provide for future exchanges of information in these reports electronically with facility, state, or federal data systems. For example, as mentioned earlier, it is possible that there might be other audiences for the ERT data. We believe that by providing stack test and facility data electronically through the ERT and CDX may allow for S/L/Ts to update Airs Facility System, for example, which could result in a decrease of some existing reporting requirements' burden for S/L/Ts.

The Cross-Media Electronic Reporting Regulation (CROMERR) (http://www.epa.gov/CROMERR/index.html) has been recently promulgated to provide the legal framework for electronic reporting of information and data to EPA and others who administer EPA programs. CROMERR is intended to reduce the cost and burden of electronic reporting while maintaining the level of corporate, legal, and individual responsibility and accountability that exists in the traditional paper format. At this time, we intend to develop our data flow process through the ERT to WebFIRE to fully comply with CROMERR.

Once received through CDX, the source test data would be stored in WebFIRE. We are revising WebFIRE to collate and integrate the data into emissions factors calculations for similar processes, pollutants, and control devices. WebFIRE will calculate the arithmetic mean of the data in individual source test reports to provide updated emissions factors on a periodic schedule. We do not plan to update emissions factors as each source test is received. Source test data will not be used for new or amended emissions factors until the data have been vetted through our public review process.

We understand that updating emissions factors very frequently may be disruptive to emissions factors users because it could create a rapidly moving target that could add significant uncertainty to users. Instead, we plan to schedule periodic updates. Such updates might be based on a specified calendar schedule to allow interested parties to understand when an update might be expected. Because updating emissions factors impacts many other programs, such as operating and new source review permitting, modeling, risk and technology analysis, control strategy development, enforcement, and others, we believe that updating specific emissions factors more than once per year would complicate activities for these other programs. Other triggers could be when a certain volume of new data is submitted in certain categories or when

the newly submitted data results in significant changes to the emissions factor. Some stakeholders expressed concern that new data would be used to automatically update emissions factors and that there would be no opportunity afforded to comment on the accuracy, representativeness, and/or completeness of the new data. Although we received several other similar comments on this issue in the ANPRM public comment process, we have not made any decisions on the emissions factors update frequency yet.

When all data for a specific source category, control device, and pollutant are compiled and resultant emissions factors are drafted, we will continue (as is our current practice) to notify all subscribers to the CHIEF list serve (http://www.epa.gov/ttn/chief/listserv.html) that new draft emissions factors are available for public review. We plan to add a feature into WebFIRE that will automatically notify subscribers of the availability of new proposed emissions factors for review and comment. Note that when new performance tests and data are submitted to WebFIRE, they will be available for review although the data will not have been used yet to update the corresponding emissions factor.

We currently plan to build decision criteria into WebFIRE that would be used to select the test data to be used in an emissions factor update. We have developed a statistical approach that we may use to select performance test data for emissions factors development. We anticipate that the changes to the data reporting system will generally result in higher quality and significantly more data than may have been available in the past for developing some emissions factors. More information on this statistical approach will be available in the upcoming revisions to the emissions factors development procedures document.

WebFIRE will be revised to assign an emissions factor quality rating based on specified criteria. We presently assign an emissions factor rating to indicate the ability of the overall average factor to represent a national annual average emissions rate for the source category. The emission factor rating is an overall assessment of how good a factor is, based on both the quality of the test(s) or information that is the source of the factor and on how well the factor represents the emission source. Higher ratings for emission factors are, at this time, based on many unbiased observations or on widely accepted test procedures. However, we are considering other criteria for determining the ratings of emissions factors. For example, we are thinking of using a statistical approach to assigning a rating and more information on this approach will be proposed in the upcoming revisions to the emissions factors development procedures document. In the current version of the unpublished procedures guidance document, we state, as an example, that an emissions factor based on 20 or more source tests on different randomly selected plants would likely be assigned an “A" rating if all tests are conducted using a single valid federal reference measurement method. Likewise, the guidance indicates that a single observation based on questionable methods of testing would be assigned an ``E" rating.

As we revise WebFIRE, a key issue will be how it groups emissions data into related clusters for which the average emissions factors will be developed. Examples of some of the groupings we consider in the present system include the source category, process type, representativeness of source, emission source, equipment design, operating conditions, raw material or fuel characteristics, control devices, and test method used. As a result of comments we have received

on the source category code system (SCC), we are revising (more like tweaking) the system to make SCCs more consistent with their original intent.

Once the SCC for the facility is determined, the specific pollutant measured, and the control device is determined, our revised procedures should guide the developer through a process of grouping the data. One type of grouping may result in combining data from several SCCs (for example Utility, Industrial, Commercial and Institutional combustion, or the four types of Portland Cement Manufacturing processes). Another type of grouping could result in data from different types of control devices being combined. In the emissions factor development process, these characteristics (and others) are evaluated to determine whether there is a significant difference in the factors when different SCC and/or controls are represented. The criteria used to determine whether to combine data have varied. We plan to propose a statistical approach to determine whether sources types are similar enough to be grouped together in the upcoming emissions factors development procedures document.

CONCLUSIONS

Based on the feedback received from the ANPRM, other EPA offices, S/L/Ts, and other stakeholders, we believe we are on the right track for improving data collection and submittal to WebFIRE which will result in more effective rulemaking and risk analyses. We understand that there are still some very important issues, such as avoiding duplicative reporting from sources and ensuring that S/L/Ts continue to receive compliance status reports and performance tests, to be resolved. We want to continue to work closely with all stakeholders to ensure we develop an emissions factors development system that will serve all users and produce emissions factors that all users can employ with confidence. To that end, we will be publishing the emissions factors development procedures guidance near the end of this year for public comment. Also, look for improvements in the ERT in the near future as well. We expect WebFIRE to be fully functional by the end of 2011. If you have comments about the emissions factors development process, then please contact me at driscoll.tom@epa.gov.

KEY WORDS

Emissions factors, WebFIRE, electronic data submittal, emissions quantification, source classification codes

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