

APPENDIX E

**MEETING MINUTES FOR THE JUNE 8, 2004, REVAMPING THE EMISSIONS FACTORS
PROGRAM WORKSHOP**

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DATE: September 30, 2004

TO: Mr. Ron Myers
U.S. EPA/EMAD/EFPAG

FROM: Mr. Sean Mulligan
MACTEC Federal Programs, Inc.

CONTRACT: Contract No. 68-D-01-003, Work Assignment No. 4-03

SUBJECT: Meeting Minutes for the June 8, 2004, Revamping the Emissions Factors Program Workshop

WORKSHOP SCHEDULE AND LOCATION

A stakeholders' workshop was held on June 8, 2004, at the Hilton Clearwater Beach Resort, Clearwater, Florida. The workshop commenced at 8:00 am and lasted until 12:00 pm.

WORKSHOP PURPOSE

The workshop was held to assess challenges facing the emissions factor program over the next 3 to 5 years and to develop action items that maintain attendees' involvement in the future of the program. It was organized and led by the Emission Factors and Policy Applications Group (EFPAG) of the Office of Air Quality Planning and Standards (OAQPS).

Attendees

Approximately 75 people attended the workshop. The attendees included personnel from EPA, State governments, foreign governments, Regional Planning Organizations, universities, trade organizations, industry, and consulting firms. A complete list of attendees is included as Attachment 1.

WORKSHOP SUMMARY

The workshop commenced with a presentation by the workshop chairman, Mr. Peter Westlin (OAQPS, EFPAG), regarding the purpose of the workshop and the status of the emission factor development program. Mr. Westlin's presentation was followed by a presentation from the keynote speaker, Mr. Patrick Gaffney of the California Air Resources Board (CARB). Presentations by Messrs. Tom Driscoll, Ron Myers, and John Bosch, all of OAQPS, followed the keynote presentation.

Following a short break, the attendees broke into five groups of approximately equal size. A facilitator and recorder were assigned to each group. Each group was assigned one of the following discussion topics:

1. Tools, rules, and guidance for non-inventory applications.
2. Establishing, understanding, and using emissions factor data quality information.
3. Test report assessment and reporting for developing emissions factors.

4. Tapping into industry-sponsored emissions testing to build emissions factors databases.
5. Authority for approving and criteria for using emissions factors.

Approximately 1½ hours were devoted to group discussions. At the conclusion of the individual break out sessions, each group presented all of the attendees with a summary of the topic discussed, issues identified, and at least one proposal to improve management of emission factors in the area discussed. Following these summaries, Ms. Jamie Kaye Whitfield (OAQPS, EFPAG) gave closing remarks to end the meeting.

PROPOSALS FROM THE GROUP BREAK OUT SESSIONS

The key points and proposals made by each group are discussed below. Additional points made by the groups and issues discussed during the group break out sessions are included as Attachment 2.

Topic 1: Tools, Rules, and Guidance for Non-Inventory Applications

The group discussion focused on three areas: a description of non-inventory applications of emission factors, tools and guidance that should be developed, and the need for additional emission factor data. Non-emission inventory uses of emission factors were defined to include risk assessment, permitting, and enforcement applications. The group recommended that guidance be developed regarding the use of speciation profiles and the estimation of uncertainty. The group also recommended that emission factor confidence limits be developed and limits on the use of emission factors be defined. Furthermore, the group recommended that incentives be developed to encourage industry to conduct source tests to quantify emission uncertainty. Finally, the group discussed the additional data that should be collected to improve the development of emission factors.

The group made one proposal:

Proposal 1: Develop meta data for each emissions factor to evaluate its applicability for non-emissions inventory applications. EPA will take the lead in establishing a template for the meta data. The meta data will include information that can be used to evaluate the uncertainty associated with each emissions factor.

Topic 2: Establishing, Understanding, and Using Emissions Factor Data Quality Information

The group discussion focused on the need to develop uncertainty data to better evaluate emission factor quality. Recommendations from the group included: establish a database to serve as a community pool of information and allow for information exchange, develop an electronic system to capture process-specific and QA data, define a template/criteria for emissions factor data quality, and establish international collaboration regarding emissions factor development activities and source category compatibility.

The group made one proposal:

Proposal 2: EPA should solicit experts to establish an emissions factor QA workgroup. The workgroup would define QA criteria for uncertainty (e.g., ranking of criteria, relevance by source). The workgroup would also define requirements and user needs for an electronic cataloging (database) system.

Topic 3: Test Report Assessment and Reporting for Developing Emissions Factors

The group discussion focused on the need to streamline and standardize the test report assessment and reporting process. Specific tasks would include the developing minimum requirement checklists for test reports, establishing a web-based clearinghouse of test reports and assessments that have been conducted, prioritizing emission factors for update, and conducting a public relations effort to educate people regarding the existence of the clearinghouse and convince them to place data in it. The group also recommended that incentives be established in association with the public relations campaign, that the uncertainty associated with each emissions factor be quantified, and that minimum data requirements be defined.

The group made two proposals:

Proposal 3A: EPA, in collaboration with stakeholders, will map out a process to develop guidance documents for test report assessment and reporting, including guidance for streamlining the process, checklists of minimum requirements, and standardization.

Proposal 3B: EPA will lead an effort to develop an electronic clearinghouse of test data reports to make data available to all interested parties. The clearinghouse should be easy to enter and access data, include data quality ratings, include an indicator regarding the use of test reports, contain clear contact information, and replace paper files. A public relations effort and incentives will need to be developed to encourage people to enter test reports into the clearinghouse.

Topic 4: Tapping into Industry-Sponsored Emissions Testing to Build Emissions Factors Databases

The group discussion focused on four primary issues: barriers to industry-sponsored emissions testing, development of an administrative process to manage the development of the emissions factors, communication amongst stakeholders, and the development of incentives. Barriers to industry-sponsored emissions testing include the availability of resources to develop/review emission factors, fear that the results will affect compliance status, and lack of trust between stakeholders. Administrative process issues include defining and establishing an organizational structure, developing protocols and performing QA/QC, standardizing test methods, and streamlining the review and publication of emissions factors. Communication issues include encouraging participation by all stakeholders, establishing trust between stakeholders, managing perceptions, and establishing a web-based reporting system. Incentives to industry-sponsored emissions testing include encouraging/acknowledging industry involvement, providing amnesty, and reducing compliance and annual testing requirements.

The group made one proposal:

Proposal 4: Establish a task force of stakeholders (EPA, State, local, and Tribal organizations, Regional Planning Organizations, STAPPA/ALAPCO, environmental organizations, trade associations, and industry) to:

- Create an administrative structure/process that will govern the development of an emissions factor database, establish QA/QC procedures and protocols, coordinate the development of new test methods, and streamline key processes.
- Improve communication and establish trust between stakeholders, allow open participation by all stakeholders, identify priorities, and manage perceptions.
- Develop incentives for industry to participate in the program.

Topic 5: Authority for Approving and Criteria for Using Emissions Factors

The group discussion focused on two primary points: the authority for approving emissions factors for use, and criteria for accepting and using emissions factors. The group recommended that a Federal Advisory Committee Act (FACA) committee be established to develop criteria to rate emission factors and approve and authorize the emission factors for specific uses. In addition, the group recommended that a data format be established that would allow initial and continual improvement of the emissions factors. Finally, the group recommended that a consistent protocol for the development of emissions factors be developed to ensure that the emissions factors reflect current technology and practices and that all appropriate criteria are included to allow for electronic data management.

The group made one proposal:

Proposal 5: Establish a FACA-like process to frame guiding principles for the emissions factor development process. The desired outcome of such a process would be the establishment of peer review practices, criteria for using emissions factors, and community/expert involvement that would lead to the acceptability/legitimacy of emissions factors.

**ATTACHMENT 1
ATTENDEES TO THE JUNE 8, 2004,
REVAMPING THE EMISSION FACTOR PROGRAM WORKSHOP**

This page included to provide for two-sided printing.

WORKSHOP ATTENDEES - JUNE 8, 2004

| Name | Organization |
|---|---|
| USEPA | |
| Lala Alston | U.S. Environmental Protection Agency |
| Rafiu Dania | U.S. Environmental Protection Agency |
| Madonna Narvaez | U.S. Environmental Protection Agency |
| George Setlock | U.S. Environmental Protection Agency |
| Industry | |
| J. Wayne Boulton | RWDI Group |
| Garry Brooks | ERG, Inc. |
| Stefano Caserini | ARPA LOMBARDIA |
| Jeff Coburn | RTI International |
| D. Alan Hansen | EPRI |
| Richard Karp | American Petroleum Institute |
| Mike Kenney | URS Corporation |
| Steve Koo | Lakes Environmental Software |
| David McDougall | Northrop Grumman Mission Systems |
| Roy Neulight | RTI International |
| Steve Reid | Sonoma Technology, Inc. |
| Kris Russell | DFW International Airport |
| Trudi Trask | Levelton Consultants Ltd. |
| Birute Vanatta | ERG, Inc. |
| State/Local/Regional/International Agencies | |
| Steve Allison | GA Department of Natural Resources |
| Alan Ballard | Ventura County Air Pollution Control District, CA |
| David Brown | NE Department of Environmental Quality |
| Danielle Brown | FL Department of Environmental Protection |
| Linda Brown | LA Department of Environmental Quality |
| Elizabeth Byers | LA Department of Environmental Quality |
| Lori Campbell | NV Department of Conservation and Natural Resources |
| Renu Chakrabarty | WV Department of Environmental Protection |

WORKSHOP ATTENDEES - JUNE 8, 2004 (cont.)

| Name | Organization |
|--------------------|--|
| Kevin Connolly | IA Department of Natural Resources |
| Robert Downing | Maricopa County Environmental Services Department, AZ |
| Scott Edick | MI Department of Environmental Quality |
| David Fees | DE Air Quality Management |
| Patrick Gaffney | CA Air Resources Board |
| Jason Hawirko | Alberta Environment |
| Heather Hawkins | NC Department of Environment and Natural Resources |
| Grant Hetherington | WI Department of Natural Resources |
| Becky Hodsdon | ME Department of Environmental Protection/ Bureau of Air Quality |
| Ebrahim Juma | Clark County, NV |
| Heather Lancour | NM Air Quality Bureau |
| Genie McGaugh | Ventura County Air Pollution Control District |
| Russell Merle, Jr. | Clark County, NV |
| John Noller | MO Department of Natural Resources |
| Ana Paula Ocampo | Secretaría de Ecología |
| Nick Page | IA Department of Natural Resources |
| Gary Reinbold | ID Department of Environmental Quality |
| Michelle Root | MS Department of Environmental Quality |
| Tony Sabetti | State of North Carolina |
| Megan Schuster | MARAMA |
| Furqan Shaikh | GA Department of Natural Resources |
| Annette Sharp | CENRAP |
| Steven Smeltzer | Alamo Area Council of Governments, TX |
| Larry Smet | Ontario Ministry of the Environment |
| Ron Stannard | NY Department of Environmental Conservation |
| Marnie Stein | IA Department of Natural Resources |
| Lori Tilley | City of Jacksonville, FL |
| Nicholas Ting | Ontario Ministry of Environment |

WORKSHOP ATTENDEES - JUNE 8, 2004 (cont.)

| Name | Organization |
|-----------------|--|
| Lori Van Bemden | Pinellas County, FL |
| Tom Velalis | OH Environmental Protection Agency |
| Alain Watson | Environmental Protection Commission of Hillsborough County |
| Roger Westman | Allegheny County Health Department, PA |
| Yaming Wu | Shanghai Environmental Monitoring Center |
| Gary Young | Polk County, IA |
| Universities | |
| Edi Munawar | Ecological Engineering Department, Toyohashi University of Technology, JAPAN |
| Thomas Stark | University of Notre Dame |

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ATTACHMENT 2
DETAILS FROM THE GROUP BREAK OUT SESSIONS HELD DURING THE
JUNE 8, 2004, REVAMPING THE EMISSION FACTOR PROGRAM WORKSHOP

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**DETAILS FROM THE GROUP BREAK OUT SESSIONS HELD DURING THE
JUNE 8, 2004, REVAMPING THE EMISSION FACTOR PROGRAM WORKSHOP**

Group 1: Tools, Rules, and Guidance for Non-Inventory Applications

A. Major Points Discussed

- Non-emissions inventory applications include risk assessment, permitting, and enforcement
- Existing EPA stack testing methods should be revised
- Guidance should be developed regarding the application of control efficiency for various control devices
- More meta data regarding the background of emissions factors (e.g., better process descriptions) are needed. The meta data should include a matrix of data quality indicators and links to how different organizations apply emissions factors
- VOC and PM speciation profiles should be expanded and guidance should be developed regarding how to apply them.
- Guidelines for uncertainty estimation should be developed (permit application)
- Guidelines for uncertainty estimation should be developed (permit application)
- Limits on the use of emissions factors should be specified
- Emissions factor confidence limits should be developed
- Incentives should be developed to conduct tests to quantify uncertainty.
- Higher-rated emissions factors (that theoretically include less uncertainty) would require less frequent tests
- Different uncertainty indices should be developed.

B. Proposals Developed

- Develop meta data for each emissions factor to evaluate its applicability for non-emissions inventory applications. EPA will take the lead in establishing a template for the meta data. The meta data will include information that can be used to evaluate the uncertainty associated with each emissions factor.

Group 2: Establishing, Understanding, and Using Emissions Factor Data Quality Information

A. Major Points Discussed

- Precision, accuracy, and uncertainty are not currently quantified for emissions factors
- Attach emissions factor uncertainty to permits
- Data quality should be compared across different technologies
- Uncertainty may help reveal the need for better data
- Parametric evaluations
- Establish a database to serve as a community pool of information and allow for information exchange
- Develop an electronic system with underlying QA criteria/rules to systematically catalog process-specific source data in the field and to capture QA data
- Implement a work group process to define a template/criteria for emissions factor data quality
- Establish international collaboration regarding emissions factor development activities and source category compatibility
- Use a database to determine where additional research is needed
- Source testing is resource intensive; therefore, there is a need to improve the use of source testing in the emissions factor development process
- Quality Assurance Plan input
- Define whether, and if so, how to incorporate uncertainty limits into the emissions factors and associated information
- Establish standard criteria to describe “best science” in emissions factor development

B. Proposals Developed

- EPA should solicit experts to establish an emissions factor QA workgroup. The workgroup would define QA criteria for uncertainty (e.g., ranking of criteria, relevance by source). The workgroup would also define requirements and user needs for an electronic cataloging (database) system.

Group 3: Test Report Assessment and Reporting for Developing Emissions Factors

A. Major Points Discussed

- Establish guidance for streamlining the test report assessment and reporting process
- Standardize, with EPA coordination, the process to ensure consistency. Standardization would include both the test reports and the assessments
- Develop checklists of minimum requirements for test reports
- Establish a clearinghouse of test reports and assessments that have been conducted. Clearinghouse should include a web-based system for data input and allow for periodic review/assessment
- Prioritize emissions factors for update
- Access to the clearinghouse (e.g., full public access, limited public access, or access limited to EPA/state air quality agencies) must be defined
- Assess CEMS data for emissions factor development
- Identify data gaps
- Conduct a public relations effort to educate people regarding the existence of the clearinghouse and convince them to place data in it
- Establish incentives to go along with the PR campaign
- Establish criteria for data acceptability
- Quantify the uncertainty associated with each emissions factor
- Ensure that background data are available
- Identify and allow more process data to be captured for each test
- Identify resources
- Investigate creative solutions to issues (e.g., adopt an emissions factor approach)
- Streamline the peer review process
- Allow emissions factor fast tracking

B. Proposals Developed

- EPA, in collaboration with stakeholders, will map out a process to develop guidance documents for test report assessment and reporting, including:
 - guidance for streamlining the process,
 - checklists of minimum requirements, and
 - standardization.
- EPA will lead an effort to develop an electronic clearinghouse of test data reports to make data available to all interested parties. The clearinghouse should:
 - be easy to enter and access data,
 - include data quality ratings,
 - include an indicator regarding the use of test reports,
 - contain clear contact information, and
 - replace paper files.
- A public relations effort and incentives will need to be developed to encourage people to enter test reports into the clearinghouse.

Group 4: Tapping Into Industry-Sponsored Emissions Testing to Build Emissions Factors Databases

A. Major Points Discussed

- The group identified four primary issues, including barriers to industry-sponsored emissions testing, development of an administrative process to manage the development of the emissions factors, communication amongst stakeholders, and the development of incentives. Each of these issues is expanded upon below.
- Barriers to industry-sponsored emissions testing include:
 - Availability of money, staff, time, and/or knowledge to develop/review emissions factors
 - Fear of results including changes in compliance status due to test results and restrictive conditions that might be imposed due to test results
 - The number of emissions factors is increasing
 - Lack of trust between stakeholders
 - Scheduling emissions tests
 - Use of inconsistent test methods
 - Availability of audit samples
- Administrative process issues include:
 - Defining and establishing an organizational structure
 - Maintaining oversight
 - Developing data review protocols and QA/QC guidelines and policies
 - Performing QA/QC
 - Developing standard test methods
 - Joint selection of contractors
 - Observing tests
 - Streamlining review and publication of emissions factors
 - Identifying priorities for pollutants/sources to be tested
 - Developing an emissions factor database
- Communication issues include:
 - Open participation by all stakeholders (EPA; State, local, and Tribal organizations; environmental groups; industry; contractors; etc.) is crucial
 - Establish online reporting of test results/emissions factors
 - Managing perceptions
 - Establishing trust
- Incentives to industry-sponsored emissions testing include:
 - Encourage/acknowledge industry involvement
 - Provide amnesty to industry
 - Manufacturers of control equipment testing
 - Peer pressure
 - Enforcement
 - Compliance and annual testing requirements
 - Streamlined review of emissions factors
 - Improved emissions factor accuracy
 - Allow industry to help define priorities for pollutants/sources to be tested

B. Proposals Developed

- Establish a task force of stakeholders (EPA, State, local, and Tribal organizations, Regional Planning Organizations, STAPPA/ALAPCO, environmental organizations, trade associations, and industry) to:
 - Create an administrative structure/process that will govern the development of an emissions factor database, establish QA/QC procedures and protocols, coordinate the development of new test methods, and streamline key processes.
 - Improve communication and establish trust between stakeholders, allow open participation by all stakeholders, identify priorities, and manage perceptions.
 - Develop incentives for industry to participate in the program.

Group 5: Authority for Approving and Criteria for Using Emissions Factors

A. Major Points Discussed

- Involving State/local/EPA work groups in the emissions factor review and approval process
- Establishing a Federal Advisory Committee Act (FACA) process for the overall emissions factor development and use process
- Establishing a definition of what is good enough for an emissions factor
- Establishing a hierarchy of acceptance to use/approval of emissions factors (e.g., centralized review, regional review, and State review)
- A need for transparency in the emissions factor development methodology
- Clear expression of applicability of criteria
- Ensuring a consistent methodology is used for emissions factor development
- Ensuring that the emissions factors reflect current technology and practices
- Inclusion of criteria for electronic data management
- Ability to update the emissions factors: “living review”
- Performing continuous review and QA/QC of the emissions factors
- Development of industry vs source-specific or industry vs technology-specific emissions factors

B. Summary of Points Discussed

- After identifying the issues listed above, the group categorized issues 1 through 4 as addressing the authority for approving emissions factors for use, and categorized issues 5 through 12 as addressing the criteria for accepting and using emissions factors. The group then summarized the issues addressing authority for approving emissions factors for use as:
 - Establishing an emissions factors FACA committee
 - Emissions factor approval authority would be defined within the FACA umbrella activity.
 - Individual subgroups would be charged with establishing definitions for what is good enough for an emissions factor’s intended use
- Similarly, the group summarized the issues addressing the criteria for accepting and using emissions factors as:
 - Establishing a data format that would allow initial and continual improvement of the emissions factors
 - Establishing a consistent protocol for the development of emissions factors to ensure that issues 5 through 12 are each addressed.

C. Proposals Developed

- Establish a FACA-like process to frame guiding principles for the emissions factor development process. The desired outcome of such a process would be the establishment of peer review practices, criteria for using emissions factors, and community/expert involvement that would lead to the acceptability/legitimacy of emissions factors.