

Day 1, May 4, 2003

- P1 800-810 Welcome & Introduction
- P2 810-840 Present the context for the meeting
1. Purpose of the workshop
 2. Goals in relation to other long-term and short-term efforts
- P3 840-900 Present the format of the meeting
1. Two main tracks – activity tracking and emissions calculation
 2. Some overlap – for instance identification of fuel type could be included in tracking systems, or assigned in the emissions estimation step. (Since this workshop focuses on short term plans, the assignment of fuel type is currently included in the emission calculation track.)
- P4 900-945 Fire Emissions & Air Quality Planning–Highlights of RPO Approaches
1. Background–Overview of methods currently used by RPO's
 2. Differences in approaches
 - a. What are the fire attributes that are likely to contribute to inter-RPO differences in methodologies. (ie. More distributed/unregulated prescribed in VISTAS)
 - b. What are the institutional barriers to implementing a common fire methodology including different photochemical and emissions models, and levels of expertise.
 3. Uses of Emissions Inventories– How will emissions inventories be used, and what data quality objectives (DQOs) are appropriate? (Seasonal modeling, specific episodes, real time forecasting). Explain the difference in requirements between SIP/TIP inventories and modeling inventories
- P5 1000-1100 Activity Tracking: education/overview; including event characterization
- P6 1100-1200 Emissions & Consumption – education/overview
1. Overview of fuel consumption and emission models: required inputs, methodologies for calculating consumption and emissions, and outputs
 2. Fuel mapping effort (relation to NFDRS and CIRA model)
 3. Update on emission factors
 4. Update on fire emission model development (e.g., BlueSky), data quality objectives

Track 1

- T1/P1 1330-1400 Required data elements (spatial & temporal resolution)/DQO's
1. What data elements are needed in fire occurrence databases to make emissions estimates? What default assumptions should be used when specific data are not available (i.e., how should fires be allocated)?
 2. Perimeter data is usually not available in incident databases.
 3. What format should the fire occurrence databases take? What is the most effective format in terms of creating an emissions inventory?
 4. Data Quality Objectives (see matrix for summary of discussions related to the objectives for different data elements)

- T1/P2 1400-1615 National Fire Activity Databases & Options
1. Background on available national datasets
 2. What is the correct way to store and manage fire inventories for modeling?
 3. Who will pay for data retrieval?
 4. What local data is not covered in the national databases? What databases or other tracking method exist for State and private lands?
 5. Do the current databases meet the needs for emissions inventories?
 - a. What additional efforts are underway?
 - b. What is needed?
- T1/B1 1515-1615 IMPROVE, Tracer and source apportionment studies, back trajectory analysis
1. What are the practical implications of data analysis studies to emissions inventory development?
- T2/P1 1330-1400 Emission Calculation Techniques and Inventory Format
1. What are current recommended (and default) emissions estimation processes?
 2. What additional data improvements are ongoing and what is needed beyond those already planned?
 3. Are the emissions techniques the RPO and EPA currently using consistent? Are they transparent and reproducible?
 4. What formats and data are required for emission inventories?
 5. Data Quality Objectives (precision and accuracy)
- Track 2*
- T2/B1 1400-1615 Fuel Characterization (1st & 2nd Sessions)
- General – What are recommended (and default) processes for estimating fuel consumption?
1. Should we make any changes in the near term?
 2. What adjustments are needed ?
 3. Is the NFDRS approach adequate in the near term or for some types of fires?
 4. What approach can be used to incorporate the variability in vegetation type?
 5. What's new in Fuels characterization
 - a. FCCs
 - b. Landfire
 6. Linkages to CONSUME & FOFEM
 7. What else is needed that's not being done /planned
- T2/B2 1400-1615 Emission Factors (1st & 2nd Sessions)
1. Can general emission factors be used for smaller fires? (If so, how should the breakdown between flaming and smoldering be computed?)
 2. What emission factors should be used for air toxics (HAPs)? Are the emission factors in the EC/R report adequate?
 3. Speciation of VOC and PM emissions
 - a. Are there new speciation profiles for VOC and PM that would replace the problematic profiles that are currently available? Who will make them usable for modeling?
 - b. VOC can be calculated based on relationships with CO and CO₂. However, these measurements may understate oxygenated compounds. Should estimation methods for VOC be changed to reflect new data on oxygenated VOC species?
 4. What emission factors or equations should be used for NO_x, NH₃, and SO₂?

1615-1645 *Group leaders and track facilitators lead sessions in preparing conclusion slides*

P7 1645-1725 Technical Wrapup

Day 2, May 5, 2004

Track 1

T1/P3 830-900 Data QC & Augmentation—reasonable techniques, double counting, burned perimeter v. blackened area (Data Activity augmentation and QA)

1. What are the reasonable QA & augmentation techniques RPO's should use?
2. Double-counting: What steps can be taken to coordinate different data sets so that duplicate fires can be easily identified?
3. Burned perimeter vs blackened area
 - a. What approach can be used to QA actual burned area? Can satellite data be used?
 - b. Should default adjustments be made to convert reported burned area to blackened area?
4. What discrepancies exist in prescribed burn reports between treated area, such as watersheds, and actual burned area?

T1/B2 900-1115 Remote Sensing and GIS methods for data augmentation
&4

1. What are the limitations of using satellites for QA & augmentation?
2. What approach can be used to QA fuel type data? GIS or satellite databases?
3. What discrepancies exist between type of vegetation reported at the outset of a fire vs. the type of vegetation representative of the bulk of vegetation burned?

T1/B3 900-1115 Agricultural Fire Tracking
&5

1. Available databases and emission factors
2. Residue burning practices - crops burned, frequency, seasonality
3. Other agricultural burning - fence row and ditch burning

T1/P4 1130-1215 Projection of Future Fire Activity/Emissions
1330-1500

1. What is the best way to show changes in fuel availability in future years?
2. What is the best way to characterize inter-year variability in fire emissions photochemical models?
3. What is the correct way to characterize climate change impacts on fires?

Track 2

T2/P2 830-900 Fire Emissions Modeling Systems (formats, input requirements, emission estimation, outputs, QA)

1. Is there a common emissions model that the RPO's can agree to? Should they?
2. Do the differences in emissions model formats, input requirements, emission calculations, and outputs create barriers between RPOs?
3. What additional spatial & temporal information are needed?
4. Charge to the breakouts as to their goals & expectations.

- T2/B3 900-1215 Fuel Consumption & Fire Emissions Models—Consume, FOFEM, FEPS, application questions
1. Status & update on Consume, FOFEM & EPM/FEPS
 2. Can we develop a recommended menu of input defaults for Consume and FOFEM to cover inputs that will not be provided by the FCC? How would these vary for different locations?
 3. When can (or should) default ton/acre or percentage-of-fuel (e.g. 25%) factors be used in place of Consume or FOFEM?
 - a. Will the percentage vary for different regions of the country or different types of vegetation?
 - b. How should the breakdown between flaming and smoldering be computed if this approach is used
 4. Should Consume, FOFEM & FEPS be used differently for different areas of the country?
 5. What approach should be used for pollutants not included in the emission models (NO_x, NH₃, SO₂, and toxics)?
- Improvements in emission models
1. What is lacking in the emission production models that we have e.g., second day smoldering
 2. What source characterization parameters req'd by the models are not readily available?
 3. What are the long range plans for Consume, FOFEM & FEPS ?
 4. What updates are needed for existing models beyond those currently planned?
- T2/B4 900-1215 Other Air Quality Model Input Needs
1. Overview: RPO Air Quality Modeling approaches, emission pre-processors, NIF format (or others)
 2. Event Characterization (point v. area, grid creep, tracking of small fires - Establishing a *de minimis* limit beyond which fires are treated as area sources
 3. Diurnal emission patterns
 4. Plume rise– What is the correct plume rise method to use?
 - a. Review current plume rise practices for flaming and crowns and recommend methods to use in the near term
 - b. New developments for smoldering plume rise
 - c. Vertical apportionment
- T2/B5 1330-1500 Quality Assurance of the Emissions Modeling Process
1. Can existing measurements be used for model evaluation?
 2. What additional measurements are needed for model evaluation?
 3. What types of fields audits and QA procedures can be used to assure the quality of the inventory & assess its accuracy?
 4. What have we learned from evaluations to date?
- P8 1515-1615 Canada & Mexico: Available Data and Emission Estimation Techniques
Group leaders and track facilitators lead sessions in preparing conclusion slides
- P9 1615-1715 Day Two Technical Wrapup

Day Three - May 6, 2004

P10 800-840 Emission Reduction Techniques—Overview of Technical and Policy Issues

Track 1

T1/B6 845-1015 ERT's & Smoke Management Plans—how to characterize SMP & other policy changes in activity forecasts

1. How can we quantify impacts of emission reduction measures?
2. What is the correct way to characterize Smoke Management Plans and other policy changes in photochemical modeling inventories?

Track 2

T2/B6 845-1015 ERT—how to reflect in the EI process

1. How should emission reduction techniques (e.g., reducing area burned, reducing fuel loading, reducing fuel consumption, increasing combustion efficiency) be reflected in the emissions inventory process?
2. How can we quantify impacts of emissions reduction measures?

1015-1030 Group leaders and track facilitators lead sessions in preparing conclusion slides

P11 1045-1230 Workshop Wrap-Up