CALPUFF Status and Update

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Outline

- EPA Regulatory Version of CALPUFF
- CALPUFF Evaluation Tool
- CALPUFF management
- CALPUFF activities
Regulatory Version of CALPUFF

- Current regulatory version
  - Original CALPUFF promulgated (April 15, 2003) - remains current regulatory version
  - Implements recommendations from Interagency Workgroup on Air Quality Models (IWAQCM)
    Phase 2 document
Regulatory Version of CALPUFF

- CALPUFF versions to date
  - 5.7 .......... April, 2003
  - 5.711a .... July, 2003
  - 5.711b .... July, 2004
  - 5.754 ..... February, 2006 (VISTAS)
  - 6.112 ...... April, 2006 (MMS)
Regulatory Version of CALPUFF

- CALPUFF update (complete)
  - evaluation and acceptance of 5.711b (July, 2004)
    - evaluation complete
    - documentation of code changes since April 2003
  - evaluation results to be posted to SCRAM
  - evaluation tool on SCRAM
CALPUFF Evaluation Tool

- developed by MACTEC
- compares 2 versions; proposed vs. current version
- determines code changes and allows evaluation to be focused
- provides a standard for evaluating changes
- will be publicly available via SCRAM
CALPUFF Evaluation Tool

- CALPUFF sources modeled (standard)
  1. Point source, non-bouyant, 30m height
  2. Point source, bouyant, 65m height
  3. Volume source, ground-based, 10m height
  4. Area source, ground-based, 0m height, 20m x 200m
CALPUFF Evaluation Tool

- CALPUFF sources (optional)

1. Three stacks...subject to downwash
   (a) 35m capped stack on 34m bldg
   (b) 35m non-capped stack on 34m bldg
   (c) 50m non-capped stack on 34m bldg

2. Buoyant area source, ground-based, 1km diameter (forest fire, landfill, smelter)

3. Tall point source, 99m, along a coast
CALPUFF Evaluation Tool

- Scenarios - divided into 3 groups, dependant on modeling domain
  
  - Large-scale – Long-range transport; on the order of 500km, where the curvature of the earth is significant
  - Medium-scale – typical Class I area with LRT for distances of 50-100km
  - Small-scale – complex flow in a deep valley
Analysis Tool

Sources
Meteorology
Terrain
Differences
Resolve & Interpret
Document

BASE
BETA
The Model Update Process

Model Changes

Major Changes

Peer Review

Public Comment?

YES

NO

Respond to comments

Minor Changes

Consequence Analysis (Tool)

OK to Release

YES

NO

YES
CALPUFF Management

- CALPUFF ownership – switch from EarthTech to TRC, effective April 21, 2006

- Transparent change to users; www.src.com to remain active

- EPA will have new contractual arrangement with TRC
Improvements in CALPUFF management

1. Consistency between TRC and EPA versions
   - strive to have only 2 versions…beta and regulatory version
   - closer working relationship and communications
   - EPA to have knowledge of upcoming changes to enable testing and decision-making for defaults
Improvements in CALPUFF Management

2. Parallel the procedures for AERMOD regulatory updates:
   - Timely updates
   - Updated documentation with each release
   - Model Change Bulletin for changes made
   - Update to regulatory defaults, if applicable
CALPUFF Management

- Improvements to CALPUFF Management
  - Funding Collaboration – Consortium; EPA and others
  - Consortium necessary to provide funding for on-going updates and research to advance the science within CALPUFF
  - Contract management - likely to be outside of EPA
Current CALPUFF studies

- National Park Service - 4-corners study
- EPA (FWS) - Performance evaluation of CALMET processes
- EPA/NOAA Evaluations of Recent CALPUFF Enhancements
- Others....
Thank You