EPA's Model Clearinghouse

Annual Status Update

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Model Clearinghouse Update

- 2018 MCH Lean Event and continuing efforts to streamline the alternative model approval process
  - The MCH was "leaned" in April 2018 with assistance of state/local and Regional Office representatives
  - The entire alternative model approval process was analyzed, many bureaucratic bottlenecks and inefficiencies were identified, and several solutions were proposed
  - More emphasis is now focused on responsibilities of the Regional Office (*actual alternative model approvers*) and coordination/communication pathways with state/local co-regulators
    - "Big Call" mentality... early group communication of all parties involved in justification/approval
    - "Off Ramps" encouraged whenever identified to expedite answer or suggest different solutions
  - The MCH Lean Team developed a list of SOPs and suggested training slides
  - The goal is to update the MCH Operational Plan later in 2021 to incorporate those SOPs and look for future training opportunities, *e.g.*, 2022 RSL Modelers' Workshop

Model Clearinghouse Update

- Model Clearinghouse SCRAM Website:
  - Model Clearinghouse Information Storage and Retrieval System (MCHISRS)
  - Model Clearinghouse Operational Plan
  - Brief Outline of the Model Clearinghouse Process
  - https://www.epa.gov/scram/air-quality-model-clearinghouse

- Five actions (4 in 2018 and 1 in early 2019) were related to BLP/AERMOD hybrid approaches for buoyant line sources and fugitive emissions.
  - Three of these BLP/AERMOD hybrid approaches involve a coke oven or steel mill in complex terrain.
  - One of these approaches represented buoyant roofline sources from a copper smelter using a combination of BLP output and AERMOD v14134… later v16216r.
  - One BLP/AERMOD hybrid approach involved a steel mill and limitations with the BLP implementation in AERMOD v16216r and has been corrected in subsequent AERMOD releases.
  - MCHISRS references: 18-III-01, 18-III-02, 18-IV-01, 18-IX-01, and 19-V-01

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- An AERCOARE-AERMOD alternative model approach was approved in Region 6 in 2019 for an overwater / deep water port project (Spot DWP). The COARE algorithm was used to prepare appropriate marine met data for use in AERMOD. (*MCHISRS reference: 19-VI-01*)

- In May 2021, Region 5 approved a stack-specific alternative modeling approach for applying downwash in AERMOD based upon improved model performance demonstrated through a model-to-monitor comparison (Rhinelander). The impact of downwash was reproduced by applying a relationship derived from wind tunnel modeling in which the effect of downwash increases with increasing wind speed and decreases with declining wind speeds. This was then implemented in AERMOD by increasing hourly emissions based on ambient wind speed to account for the increasing influence of downwash on surface concentrations. (*MCHISRS reference: 21-V-01*)

Model Clearinghouse Update

- Additional MCH Actions currently in-progress:
  - Region 1 – An AERCOARE-AERMOD alternative model approach for emissions related to an offshore windfarm that is following the pathway of the 2019 R6 Spot DWP alternative model approval.
  - Region 6 – An SO2 attainment demonstration plan modeling situation with an EGU facility that has plume treatment (penetrated plume) concerns. Working with the Regions, State, and modeling contractor on the alternative modeling protocol and justification.
  - Both of these projects have had “Big Calls” and are proceeding towards “formal” alternative model justification and submittal, but we (collective “we”) are still having exchanges and coordinating on all the necessary justification pieces.