



Proposed changes in AERMOD for NO2 modeling in Appendix W NPRM

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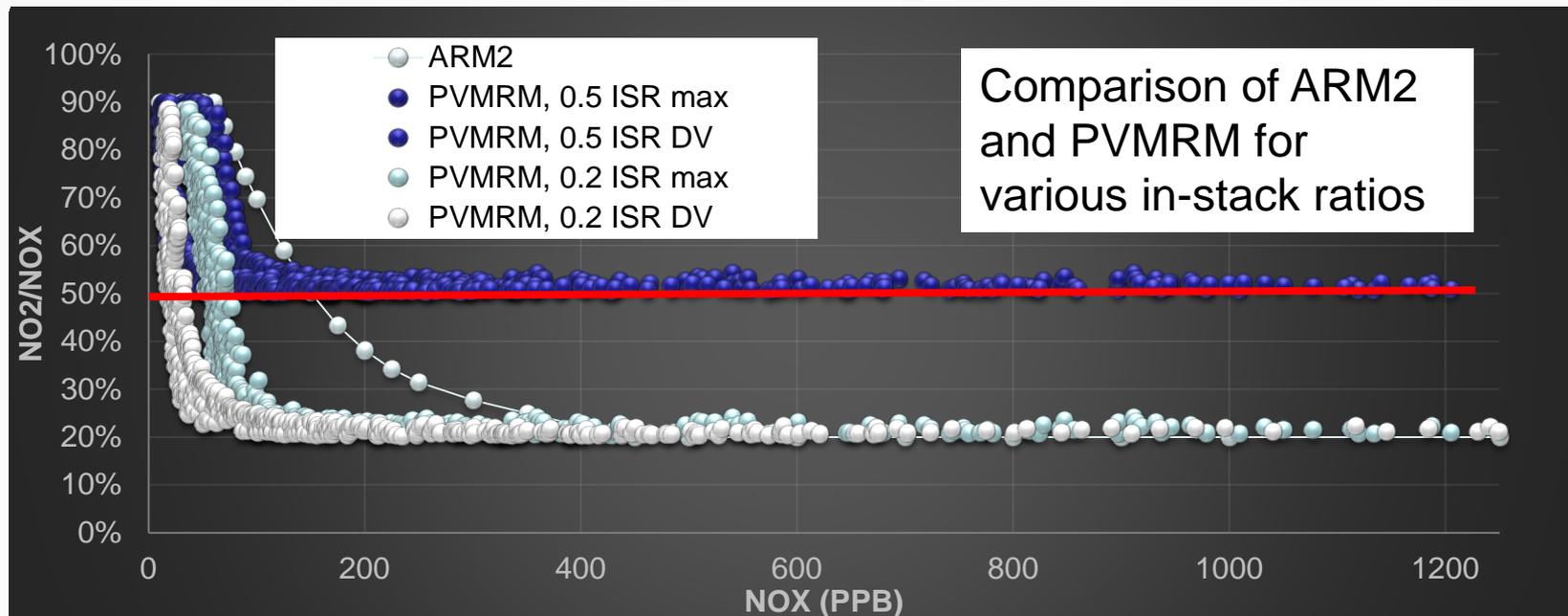
Summary of EPA proposed actions for changes in NO₂ modeling in AERMOD: Section 4.2.3.4 of proposed Appendix W

- Propose to make ARM2 the regulatory default option for Tier 2 screening
- Propose to make OLM and PVMRM regulatory default options for Tier 3 screening
- Propose to update PVMRM dispersion and plume calculations (PVMRM2)



ARM2 Adoption and Implementation

- Propose to make ARM2 the new Tier 2 NO₂ regulatory screening option
 - ARM2 Based on API study, Podrez, 2014 (Atm. Env., 103, pp 163 – 170)
 - Modify the default minimum ambient NO₂/NO_x ratio to 0.5





OLM and PVMRM Adoption and Implementation

- Propose to make OLM and PVMRM Tier 3 NO₂ regulatory screening option
 - No default for background ozone
 - Default maximum ambient NO₂/NO_x ratio of 0.9
 - Default in-stack ratio of 0.5 for primary & nearby source
 - Default in-stack ratio of 0.2 for distant sources
 - PVMRM for relatively isolated, elevated point sources
 - OLM for other sources

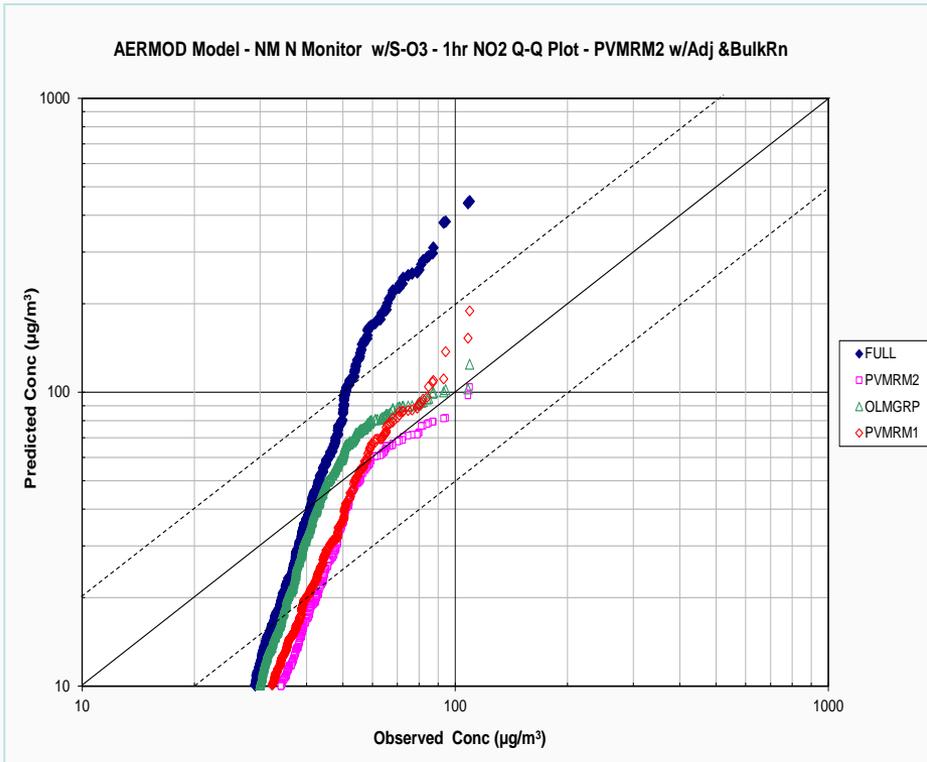


Modifications of PVMRM

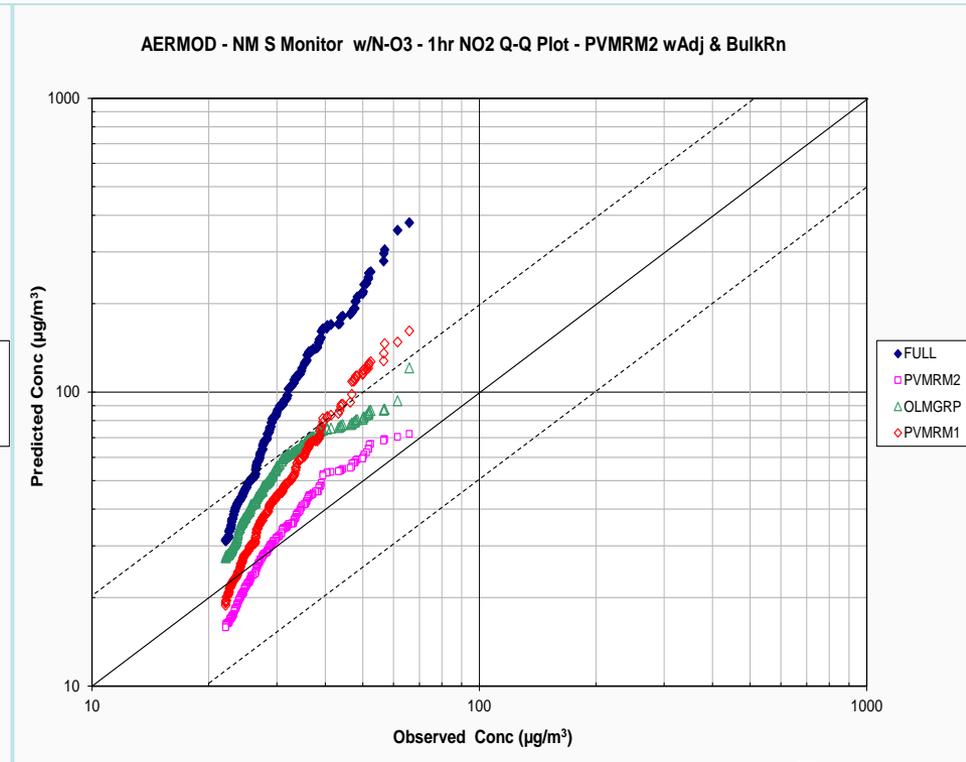
- Updates to PVMRM with new PVMRM2 option
 - Use “absolute” dispersion coefficients in stable conditions
 - Several modification to the computation of the plume volume
 - Additional miscellaneous bug fixes
- EPA proposes to replace PVMRM with PVMRM2, so both versions are provided in AERMOD 15181 to facilitate evaluations



PVMRM2 Results for Empire Abo



Empire Abo North Monitor



Empire Abo South Monitor



Regulatory Status of Tier 2 and 3 Methods

- All NO₂ options are defined as screening techniques
 - If Appendix W promulgated as proposed,
 - NO₂ options would no longer be alternative models, and would not need approval by Regional Office; however, their use would occur in agreement with the appropriate reviewing authority (Section 4.2.1b).
 - Because of the complexities of the Tier 3 options, applicants would need to consult the EPA Regional Office in addition to the reviewing authority (Section 4.2.3.4e).
 - This goes into effect with final version of AERMOD (16XXX). Thus, at present: ARM2, OLM, and PVMRM are still beta in 15181 and require Regional Office approval
 - See Model Clearing House memo 15-II-01, “Use of beta ARM2 Technique as an Alternative Model”, Aug 8, 2015



Relevant docket items

- Document Title: Technical support document (TSD) for NO₂-related AERMOD Modifications, EPA document number EPA-454/B-15-004
- http://www.epa.gov/ttn/scram/11thmodconf/AERMOD_NO2_changes_TSD.pdf