

Model Change Bulletin (MCB) 2 - BPIPPRM version 19191_DRFT changes by change type.

NOTE: BPIPPRM version 19191_DRFT is not a replacement for version 04274. BPIPPRM version 19191_DRFT is being released simultaneously with AERMOD version 19191 to facilitate testing and evaluation of the ALPHA options associated with building downwash that were incorporated into AERMOD version 19191. This version of BPIPPRM (19191_DRFT) should not be used in a regulatory context.

Enhancements

Item	Modification
1	Add initialization statements for variables UEAST and UNORTH for compatibility across compilers.
2	Replace compiler specific method for reading/parsing command-line arguments with Fortran standard functions for compatibility across compilers.

Formulation Changes

Item	Modification
1	<p>Replace method for determining effective building dimensions for <u>rectangular buildings and tiers only</u> that are oriented at an angle to the wind flow. The along flow effective building length is set as the actual distance a parcel travels across the building that is angled to the wind. This reduces the effective building length which consequently, reduces the size of the near-wake recirculation region.</p> <p>Past versions of BPIPPRM set the effective along-flow building length and effective cross-flow building width as the distance between the original longitudinal and lateral boundaries of the building vertices based on the original building orientation, prior to rotating the building perpendicular to the wind. For an elongated building with a large incident angle, this results effective building dimensions that represent a much larger building footprint relative to the actual building footprint, which may overstate the effects of the building influence on air flow and subsequently, modeled concentrations.</p>
2	Modified calculations for determining the along-flow distance from the stack location to the center of the upwind face of the rotated building/tier (XADJ), and the across-flow distance from the stack location to the center of the upwind face of the rotated building/tier (YADJ) for <u>rectangular buildings and tiers only</u> for consistency with the change in methodology for determining effective building dimensions.