Message

From: Hays, David C Jr CIV USARMY CENWK (USA) [David.C.Hays@usace.army.mil]
Sent: 1/31/2020 8:46:46 PM
To: Dolislager, Fredrick G. [dolislagerf1@ornl.gov]; Walker, Stuart [Walker.Stuart@epa.gov]; fdolislager@utk.edu
CC: Clements, Julie A CIV (USA) [Julie.A.Clements@usace.army.mil]; Rankins, Jonathan E CIV USARMY CEMVS (USA) [Jonathan.E.Rankins@usace.army.mil]
Subject: RE: BPRG model equation question

Fred, Thank you, that answers my specific concern. In the bigger picture (beyond Hunters Point eval), Guess I wonder why is it different? I expected 3D and dust external to be the same given all the same inputs? I may be getting confused as the 3D model manual text seems to suggest it is also appropriate for dust deposition. Appreciate any thoughts you may have on this.

Certainly can wait till next week, hope all have a great weekend.

Dave

-----Original Message-----
From: Dolislager, Fredrick G. [mailto:dolislagerf1@ornl.gov]
Sent: Friday, January 31, 2020 2:32 PM
To: Hays, David C Jr CIV USARMY CENWK (USA) <David.C.Hays@usace.army.mil>; Walker, Stuart <Walker.Stuart@epa.gov>; fdolislager@utk.edu
Cc: Clements, Julie A CIV (USA) <Julie.A.Clements@usace.army.mil>; Rankins, Jonathan E CIV USARMY CEMVS (USA) <Jonathan.E.Rankins@usace.army.mil>
Subject: [Non-DoD Source] RE: BPRG model equation question

Correct, in the BPRG the dust external is different from the 3D ground plane equation.

fred d.

-----Original Message-----
From: Hays, David C Jr CIV USARMY CENWK (USA) <David.C.Hays@usace.army.mil>
Sent: Friday, January 31, 2020 8:33 AM
To: Walker, Stuart <Walker.Stuart@epa.gov>; fdolislager@utk.edu
Cc: Clements, Julie A CIV (USA) <Julie.A.Clements@usace.army.mil>; Rankins, Jonathan E CIV USARMY CEMVS (USA) <Jonathan.E.Rankins@usace.army.mil>
Subject: [EXTERNAL] RE: BPRG model equation question

Stuart, thank you. I read through the user manual multiple times before asking. The Fsurf factor does make a difference between the models. Pending any additional info from Fred, I would recommend the 3D model as useful for our Hunters Point external exposures evaluation. Working through the ingestion aspects still.

Thanks again.
Dave

-----Original Message-----
From: Walker, Stuart [mailto:Walker.Stuart@epa.gov]
Sent: Thursday, January 30, 2020 5:18 PM
To: Hays, David C Jr CIV USARMY CENWK (USA) <David.C.Hays@usace.army.mil>; fdolislager@utk.edu
Cc: Clements, Julie A CIV (USA) <Julie.A.Clements@usace.army.mil>; Rankins, Jonathan E CIV USARMY CEMVS (USA) <Jonathan.E.Rankins@usace.army.mil>
Subject: [Non-DoD Source] RE: BPRG model equation question

I'll include Fred so he can add to my answer.

The GSFb, or Gamma Shielding Factor was put in the 3-D since we had a couple sites where people considered putting up material to shield the receptors from fixed contamination rather to remediate or replace the building. I remember at one of the NPL sites I think in NJ they had done that in residential basements. It was considered elsewhere, but I don't remember the site names and I think it was decided against. There is a short description in Section 4.3.12 of the User Guide

The Fr-surf which has a longer description in the User Guide is the MCNP analysis using different room sizes, density of building material, location of receptors, and thickness of contamination (gp would be for ground plane) in the 3-D scenario. We did not do such an analysis for room size in the dust scenario. There is a longer description in Section 4.3.10 of the User Guide.

Stuart Walker

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-----Original Message-----
From: Hays, David C Jr CIV USARMY CENWK (USA) <David.C.Hays@usace.army.mil>
Sent: Thursday, January 30, 2020 3:17 PM
To: Walker, Stuart <Walker.Stuart@epa.gov>
Cc: Clements, Julie A CIV (USA) <Julie.A.Clements@usace.army.mil>; Rankins, Jonathan E CIV USARMY CEMVS (USA) <Jonathan.E.Rankins@usace.army.mil>
Subject: BPRG model equation question

Stuart,

In my Hunters Point review efforts I noticed that the indoor worker external risk model equations (and results) differ between the 3D-external and the Dust models. Shouldn't they be the same? I am sure I am missing something here and would appreciate you getting me thinking correctly.

The models external calculations (pCi/cm2) differ by factors GSFb and Frsurfgp. 3D has them and dust external does not. The GSF is not a big deal as not used for HPeval. I assume the horizontal surfaces changes things, just not sure how?

Note, the dust model includes the dissipation term which is adequately explained in the user manual as "For fixed contamination in building materials or on material surfaces in the 3-D equations, the dissipation term is not included as dissipation is not expected." With the default k=0 this term is not used in the dust model so only meaningful difference is the Fsurf, that I can tell anyway. Same issues with residential external model equations.

Appreciate any thoughts/direction.

Thank you
Dave