Message

From: Clements, Mindy [clements.mindy@epa.gov]
Sent: 4/14/2021 5:37:28 PM
To: Stralka, Daniel [Stralka.Daniel@epa.gov]; Abreu, Lilian [abreu.lilian@epa.gov]
Subject: Project timelines of HPNS project
Attachments: BPRG_Users_Guide_092019.pdf

Hi Dan,
Thank you for sharing the project outline and questions that need to be addressed for the HPNS project.

Lilian,
Please work with Dan as your mentor and provide to him any deliverables requested by the project manager for this site by May 3rd. That way, Dan can review and work with you to refine the final deliverable before the middle of May for this project.

Specifically, Wayne has asked that risk assessment "examine the level of conservatism associated with the methodology and default values used in the BPRG calculator to estimate exposure via the ingestion pathway" by "looking at the impact of the BPRG approach of estimating exposure as the product of the individual parameters."

Thank you for mentoring her Dan and taking the time to work with the project manager on a task that can be completed by Lilian during her detail in Superfund risk assessment. Lilian, thank you for working on an important risk assessment project for Superfund that will help you learn risk assessment as part of your detail.

Please let me know if either of you have any questions about the timeline, expectations or the deliverable.

Thank you, Mindy Clements (she/her), R9SEMD, 415-972-3169

From: Stralka, Daniel <Stralka.Daniel@epa.gov>
Sent: Wednesday, April 14, 2021 10:26 AM
To: Clements, Mindy <clements.mindy@epa.gov>
Cc: Abreu, Lilian <abreu.lilian@epa.gov>
Subject: FW: HPNS project

Mindy, this is the project outline/questions that I have refined with Wayne. Once we start to dig into the literature and look at the choice of defaults and the basis, I think we could have conclusions by the middle of May.

From: Praskins, Wayne <Praskins.Wayne@epa.gov>
Sent: Wednesday, March 31, 2021 2:32 PM
To: Stralka, Daniel <Stralka.Daniel@epa.gov>
Subject: HPNS project

Dan –

We've discussed a project in which someone would examine the level of conservatism associated with the methodology and default values used in the BPRG calculator to estimate exposure via the ingestion pathway. The BPRG calculator generates PRGs for radiological contamination on an interior building surface. For residential exposure, our media and pathway of interest ("settled dust") are described in Section 4.1.1 of the BPRG User's Guide (attached). As can be seen in the ingestion equation in Section 4.1.1, exposure via ingestion is estimated as the product of a number of parameters. The parameters I've focused on are FTSS, SE, SA, and FQ.

$$IFD_{res\text{-}adj}\left(3{,}200{,}400\ cm^2\right) = \left\{\begin{array}{l}\left[\left[\left(FTSS_h(0.5)\times EF_{res\text{-}c}\left(\frac{350\ days}{year}\right)\times ET_{res\text{-}c,h}\left(\frac{6\ hours}{day}\right)\right)+\left(FTSS_s(0.1)\times EF_{res\text{-}c}\left(\frac{350\ days}{year}\right)\times ET_{res\text{-}c,s}\left(\frac{10\ hours}{day}\right)\right)\right]\times\right.\\ \left.SE(0.5)\times ED_{res\text{-}c}(6\ years)\times SA_{res\text{-}c}\left(\frac{16\ cm^2}{event}\right)\times FQ_c\left(\frac{17\ events}{hour}\right)\right\}+\\ \left[\left[\left(FTSS_h(0.5)\times EF_{res\text{-}a}\left(\frac{350\ days}{year}\right)\times ET_{res\text{-}a,h}\left(\frac{6\ hours}{day}\right)\right)+\left(FTSS_s(0.1)\times EF_{res\text{-}a}\left(\frac{350\ days}{year}\right)\times ET_{res\text{-}a,s}\left(\frac{10\ hours}{day}\right)\right)\right]\times\right.\\ \left.SE(0.5)\times ED_{res\text{-}a}(20\ years)\times SA_{res\text{-}a}\left(\frac{49\ cm^2}{event}\right)\times FQ_a\left(\frac{3\ events}{hour}\right)\right\}\end{array}\right.$$

FTSS = Fraction Transferred Surface to Skin (unitless) (allow different values for hard and soft surfaces)
SE = Saliva Extraction Factor (unitless)
SA= Surface Area of Fingers (cm2) (allows different values for adult and child)
FQ = Frequency of Hand to Mouth (hr-1) (allows different values for adult and child)

Parameter descriptions, default values, and references for the default values are provided in Section 5 (Table 1) in the User's Guide.

We specifically discussed looking at the impact of the BPRG approach of estimating exposure as the product of the individual parameters.

The User's Guide, the online BPRG calculator, and related information is available at https://epa-bprg.ornl.gov

Wayne Praskins | Superfund Project Manager
U.S. Environmental Protection Agency Region 9
75 Hawthorne St. (SFD-7-3)
San Francisco, CA 94105
415-972-3181