From: Patrick Laplante [plaplante@swri.edu]
Sent: Wednesday, March 16, 2005 11:32 AM
To: Patrick Laplante; Michael Waters
Cc: 'sitakanta.mohanty@swri.org'
Subject: Re: DOSE3 Issues Summary
Attachments: dose3.parameter.issuz.wpd

Sorry...forgot to attach the file.

Pat

----- Original Message -----
From: "Patrick Laplante" <plaplante@cnwra.swri.edu>
To: "Michael Waters" <MDW1@nrc.gov>
Cc: <sitakanta.mohanty@swri.org>
Sent: Tuesday, March 15, 2005 6:48 PM
Subject: DOSE3 Issues Summary

> Mike,
>
> Attached is my summary of the DOSE3 issues similar to what K. Compton sent
> out for DOSE2 last week. The actual results of my parameter review will
> be completed tomorrow, if possible, and communicated in a separate e-mail.
> I scanned the list today and didn't see anything unusual for DOSE3
> parameters but will have to check a few things. Let me know if you want to
> discuss this further.
>
> Thanks
> Pat
>
>

Hearing Identifier: HLW_YuccaMountain_Hold_EX
Email Number: 1520

Mail Envelope Properties (154701c52a3d$5bee9060$05c9a281)

Subject: Re: DOSE3 Issues Summary
Sent Date: 3/16/2005 11:32:26 AM
Received Date: 3/16/2005 11:31:07 AM
From: Patrick Laplante

Created By: plaplante@swri.edu

Recipients:
"'sitakanta.mohanty@swri.org'" <sitakanta.mohanty@swri.org>
Tracking Status: None
"Patrick Laplante" <plaplante@cnwra.swri.edu>
Tracking Status: None
"Michael Waters" <Michael.Waters@nrc.gov>
Tracking Status: None

Post Office: hermes

Files	**Size**	**Date & Time**
MESSAGE	728	3/16/2005 11:31:07 AM
dose3.parameter.issuz.wpd	36910	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

DOSE 3: Biosphere Characteristics

Team Composition
Lead Author: Mike Waters
CNWRA Lead: P. LaPlante
Review Team: K. Compton, T. Ghosh (currently on rotation), S. Mohanty

Risk Insights:

1. In general, biosphere characteristics parameters are of LOW significance in the total system calculations

2. Dose coefficients (intake to dose conversion factors) are HIGH (not previously risk ranked). Dose coefficients are in the aux data file gnewdf.dat.

3. Within the biosphere calculations (i.e., LOW total system significance), sampled parameters shown to have the most influence on results include crop interception fraction, animal and plant uptake factors, soil distribution coefficients, and consumption rates

4. Inhalation exposure time and breathing rate parameters are probably MED significance (technically DOSE3 but practically will be addressed with mass loading under DOSE2)

Summary of Module

List of Issues to be evaluated

1. Consumption rates are based on prior DOE average (mean of the survey population that eats local food), DOE has changed their averaging approach to mean of total population (lowers rates by 5x). Should we continue to use the old average? (DOE data are being used because they surveyed the local population so it's the best available information).

2. A request has been made to remove all pre-adult, age-dependent input parameters from tpa.inp since the age based calculations are no longer being used. This would clean up the input file and avoid confusion regarding what inputs must be entered to run the code. Any objections to doing this (i.e., does anyone foresee a need to conduct age-dependent dose calculations, for example, during LA review period?).

3. As a practical matter for implementing ICRP72 dose coefficients, all the input parameters assigned to adult:ICRP72 (included in the parameter description in tpa.inp) will be set to the same values as the corresponding parameters for adult:FGR11 category. This change will allow "YM region" based input parameters to be used for ICRP72 calculations. Current input parameter values for adult:ICRP72 were generic inputs used for prior evaluations to test age-dependent effects on dose calculations.

Connectivity to Other YMRP/SER Sections

DIRECT2 (upstream): Atmospheric transport model computes the location and extent of the initial deposition of ash that is an indirect input to soil pathway based dose calculations

DOSE1 (upstream): Calculates groundwater concentrations that are multiplied by the BDCF's to calculate dose. All prior ISI's related to groundwater transport are also obviously linked to this concentration estimate.

DOSE2 (upstream): Remobilization of ash and the leaching/decay calculations of ASHRMOVO establish a soil concentrations for DCAGS calculations that utilize DOSE3 parameters in dose calculations. Also, leaching/decay parameters for GENTPA groundwater pathway dose calculations are established in DOSE2.

USFIC1(upstream): Provides input regarding climate change that needs to be integrated with climate change in biosphere calculations

USFIC2(upstream): Provides input regarding climate change that needs to be integrated with climate change in biosphere calculations

Review of DOE FEP screening

No significant technical areas are known to have been screened out of explicit consideration by the DOE.

Work Required

In general, changes are not expected in most of the DOSE3 parameters and datafiles but the team will discuss any suggestions. Work needs to be completed identifying and justifying a set of selected ICRP72 dose coefficients for the TPA auxiliary data file gnewdf.dat. Also, the adult:ICRP72 category parameters in tpa.inp need to be updated to current values for YM biosphere (a cut/paste exercise that shouldn't take much time). All DOSE3 parameters will be checked that values in tpa.inp are correct and up to date.

Potential Interactions

None anticipated at this time.