

HLWYM HEmails

From: John Bradbury
Sent: Monday, March 03, 2008 4:16 PM
To: LSNReviews
Subject: Fwd: Proposed modification
Attachments: TEXT.htm

>>> John Bradbury 09/06/2007 12:30 PM >>>

Bret: I recommend the paragraph in red be added to the TPA 5.1 User Guide.

Thanks, John

Groundwater protection calculations involve a different set of computed endpoints as directed by the regulations in 10 CFR 63.331. Concentration and dose limits apply to specified categories of radionuclides. Applicable computations are included in DCAGW.

Here,

groundwater concentrations for Ra-226, gross alpha activity including Ra-226 but excluding radon and uranium, and combined beta- and photon-emitting radionuclides are computed in the same manner as used for individual protection computations (i.e., annual saturated zone radionuclide flux divided by the representative volume, where the representative volume is specified in 10 CFR 63.332). The individual radionuclides included in each of the

aforementioned categories are specified in nuclides.dat. Groundwater concentrations for gross alpha (including Ra-226 but excluding radon and uranium) and Ra-226 are reported directly as output. For combined beta- and photon-emitting radionuclides, the groundwater concentration is converted to whole body and organ doses as directed by the regulations in 10 CFR 63.331.

These calculations, where the annual saturated zone flux is divided by the representative volume (annual flux method), do not include the potential contribution to concentrations of radionuclides that have accumulated in the alluvial aquifer. It is expected that reactive radionuclides will accumulate by sorbing onto solids in the accessible environment aquifer. Desorption of these accumulated radionuclides, possibly as a result of bulk hydrochemical changes, could increase radionuclide concentrations in the groundwater above those calculated using the annual flux method. Alternatively, recycling of radionuclides, where recharge of contaminated water occurs under irrigated fields, potentially can also lead to increased radionuclide concentrations.

The probability and consequences of these FEPS is currently being investigated.

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Email Number: 291

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Subject: Fwd: Proposed modification
Sent Date: 3/3/2008 4:16:00 PM
Received Date: 3/3/2008 4:17:01 PM
From: John Bradbury

Created By: John.Bradbury@nrc.gov

Recipients:
"LSNReviews" <LSN.Reviews@nrc.gov>
Tracking Status: None

Post Office:

Files	Size	Date & Time
MESSAGE	2077	3/3/2008 4:17:01 PM
TEXT.htm	2704	

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

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