



## Model Error Resolution Document

QA: QA  
Page 1 of 2

*Complete only applicable items.*

### INITIATION

1. Originator: Maryla A. Wasiolek	2. Date: 3/27/2008	3. ERD No. MDL-MGR-MD-000001 ERD 01
4. Document Identifier: MDL-MGR-MD-000001 REV 02	5. Document Title: Biosphere Model Report	
6. Description of and Justification for Change (Identify applicable CRs and TBVs): <b><u>This ERD addressed TBV-8529 and CR-11638.</u></b> <b>In regard to TBV-8529:</b> <b>Background Information</b> —TBV-8529 was assigned to <i>Features, Events, and Processes for the Total System Performance Assessment</i> (ANL-WIS-MD-000026) (SNL 2007 [DIRS 179476]) as referenced in Section 6.2 of <i>Biosphere Model Report</i> before the FEP document was split into the following two report: FEP methods (ANL-WIS-MD-000026) (SNL 2008 [DIRS 179476]) and FEP analyses (ANL-WIS-MD-000027) (SNL 2008 [DIRS 183041]). The citation in <i>Biosphere Model Report</i> refers to the screening arguments for excluded FEPs and description of TSPA disposition for included FEPs. This information that is now included in the <i>Analyses</i> part of the FEP document (ANL-WIS-MD-000027) (SNL 2008 [DIRS 183041]). <b>Inputs and/or Software</b> —No additional inputs or software were used in performing the impact assessment. <b>Description of Changes</b> —The following is the description of changes (added text is underlined; deleted text is stricken through): <ul style="list-style-type: none"> <li>• In Section 6.2: The associated document, <i>Features, Events, and Processes for the Total System Performance Assessment: Analyses</i> (SNL 2007 <del>2008</del> [DIRS 179476 <u>183041</u>]) contains the screening arguments for excluded FEPs and describes disposition of included FEPs in the documentation that supports the biosphere model.</li> <li>• In Section 6.2: The report <i>Features, Events, and Processes for the Total System Performance Assessment: Analyses</i> (SNL 2007 <del>2008</del> [DIRS 179476 <u>183041</u>]) presents screening arguments for excluding 19 of the biosphere-related FEPs from consideration in the biosphere model.</li> <li>• In Section 9, References, reference designated as [DIRS 179476] should be replaced with the [DIRS 183041] reference (SNL 2008 <i>Features, Events, and Processes for the Total System Performance Assessment: Analyses</i>. ANL-WIS-MD-000027 REV 00. Las Vegas, Nevada: Sandia National Laboratories. ACC: DOC.20080307.0003).</li> </ul> <b>Impact Evaluation</b> —The reference to the FEP document in <i>Biosphere Model Report</i> is a general reference. No actual data or other information was obtained from that source so the changes outlined in the following paragraph have no impact on the conclusions of <i>Biosphere Model Report</i> , on <i>Safety Analysis Report</i> , or the results of the <i>Total System Performance Assessment</i> . (Continued on next page)		

### CONCURRENCE

	Printed Name	Signature	Date
7. Checker	Kenneth Rehfeldt	<i>Kenneth Rehfeldt</i>	03/27/2008
8. QCS/QA Reviewer	Charles D. Beach	<i>Charles D. Beach</i>	3-27-08
<b>APPROVAL</b>			
9. Originator	MARYLA WASIOLEK	<i>Maryla Wasiolek</i>	3.27.08
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QA: QA  
Page 2 of 2

Complete only applicable items.

## INITIATION

1. Originator: Maryla A. Wasiolek	2. Date: 3/19/2008	3. ERD No. MDL-MGR-MD-000001 ERD 01
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6. Description of and Justification for Change (continued):

**In regard to CR-11638:**

**Background Information**—CR-11638, Level D, was initiated concerning the following two discrepancies found in *Biosphere Model Report*:

1. On page 6-106, the first full paragraph, the values of dry deposition velocity are given as " $5 \times 10^{-4}$  to  $3 \times 10^{-2}$  m/s". In Table 6.6-3 (page 6-197), the range of velocity is given as  $3 \times 10^{-4}$  to  $3 \times 10^{-1}$ . The recommended fix is to explain on page 6-106 that though the range of  $5 \times 10^{-4}$  to  $3 \times 10^{-2}$  m/s is supported by an appropriate reference, a larger range of  $3 \times 10^{-4}$  to  $3 \times 10^{-1}$  was used in the *Biosphere Model*.
2. On page 6-162. After Equation 6.5.6-2, the definitions of the variables are given. For the first definition given after Equation 6.5.6-2, the variable name is listed as " $D_{inh,p,i}(t)$ " which is incorrect. The variable name should be replaced with " $D_{inh,p,i}(t, T)$ ".

**Inputs and/or Software**—No additional inputs or software were used in performing the impact assessment.

**Description of Changes**—To resolve CR-11638, the text changes described in the following paragraph are made.

(Added text is underlined; deleted text is stricken through.)

On page 6-106, first full paragraph:

The dry deposition velocity for airborne particulates,  $V_d$ , is a function of particle size and the conditions in the atmospheric boundary layer near the soil surface. For climatic conditions in the Amargosa Valley, the appropriate velocity ranges from  ~~$5 \times 10^{-4}$  to  $3 \times 10^{-2}$~~   $3 \times 10^{-4}$  to  $3 \times 10^{-1}$  m/s (BSC 2004 [DIRS 169672], Section 6.2.2.1).

On page 6-162, in definitions of parameters used in Equation 6.5.6-2:

$D_{inh,p,i}(t, T)$  = annual dose from inhalation of radionuclide  $i$  resulting from exposure to resuspended particles at time  $t$  after repository closure, conditional on a volcanic eruption at time  $T$ , where  $t > T$  (Sv/yr)

**Impact Evaluation**—These changes are editorial and have no impact on the conclusions of *Biosphere Model Report*, on *Safety Analysis Report*, the results of the *Total System Performance Assessment*, or on any other document that cites *Biosphere Model Report*.