

BSC

# Scientific Analysis Administrative Change Notice

QA: QA

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*Complete only applicable items.*

<b>1. Document Number:</b>	ANL-WIS-MD-000020	<b>2. Revision:</b>	01	<b>3. ACN:</b>	01
<b>4. Title:</b>	Initial Radionuclide Inventories				
<b>5. No. of Pages Attached:</b>	1				

<b>6. Approvals:</b>	
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<b>Responsible Manager:</b>	David Stahl <i>David Stahl</i> <span style="float: right;">9/27/05</span> Print name and sign <span style="float: right;">Date</span>

<b>7. Affected Pages</b>	<b>8. Description of Change:</b>				
4-2	<p>Editorial Error in Table 4-1, 14<sup>th</sup> row:</p> <p>Under heading, <b>Values/Table</b>, change Table 4-13 to Table 4-12:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <tr> <td style="width: 30%;">Radionuclide half-lives, constants and conversion factors</td> <td style="width: 20%;">Tables 4-3 and 4-<del>12</del><sup>13</sup></td> <td style="width: 20%;">Years, grams, mass per activity (m<sub>i</sub>/a<sub>i</sub>)</td> <td style="width: 30%;">Parrington et al. 1996 [DIRS 103896]</td> </tr> </table> <p>This change is related to CR 6151</p>	Radionuclide half-lives, constants and conversion factors	Tables 4-3 and 4- <del>12</del> <sup>13</sup>	Years, grams, mass per activity (m <sub>i</sub> /a <sub>i</sub> )	Parrington et al. 1996 [DIRS 103896]
Radionuclide half-lives, constants and conversion factors	Tables 4-3 and 4- <del>12</del> <sup>13</sup>	Years, grams, mass per activity (m <sub>i</sub> /a <sub>i</sub> )	Parrington et al. 1996 [DIRS 103896]		

Table 4-1. Direct Inputs Used in This Report

Data/Technical Information		Values/Table	Units	Source
Waste Package Configuration	Number of packages for each configuration	Table 4-2	Packages	BSC 2004 [DIRS 169472], Table 11
	Number of canisters or assemblies per package	Table 4-2	Canisters / Assemblies	BSC 2004 [DIRS 169472], Table 11
	Average CSNF radionuclide inventory in 2033 for each of the 5 WP configurations (Bins 1-5) for Case A-63,000 MTU scenario based on 1999 CSNF waste streams.	Table 4-4	Curies per radionuclide per assembly (Bins 1-5)	CRWMS M&O 2000 [DIRS 138239], from Disk I, Attachment III, File D:\BIN.EXE_Files\output_files\Case_A_63K\average_nuclides.dat. Also, see (CD for this analysis): workbook CSNFcasea63.xls
	Average Initial Burnup values for 63,000 MTU (63K) Cases A-C (Arrival scenarios) for the 5 WP configurations; number of waste packages for each waste package design	Table 4-5	Burnup in GWd/MTU	CRWMS M&O 2000 [DIRS 138239] Tables 10, 12, 14; p. 18
	Total Number of PWR&BWR Assemblies and burnup values for 63K, Cases A' to D' (Arrival scenarios)	Table 4-6	Burnup in units of GWd/MTM	BSC 2003 [DIRS 165990], Table 2
	BWR & PWR burnup values for the 63K MTHM Cases (Arrival scenarios A' to D')	Table 4-6	GWd/MTU	BSC 2003 [DIRS 165990], Table 4
	Modeled Calculation of Uncertainty for CSNF	Table 4-7 Section 6.6.1	None	DeHart and Hermann 1996 [DIRS 156084], Table 19 Hermann and DeHart 1998 [DIRS 106563], Table 24
	Isotopes Required by EPA & NRC	$^{228}\text{Ra}$ , $^{226}\text{Ra}$	none	40 CFR 197.30 [DIRS 165519] and 10 CFR 63.331 [DIRS 156605] for groundwater protection
	DSNF inventory	Table 4-8	Curies/canister	First eight worksheets of "Total 2030 D568-585.xls" (DOE 2003 [DIRS 163377])
	DSNF canister count	2,500 to 5,000	Canisters	DOE 2004 [DIRS 169354], p. 41
	SRS Glass Information	Table 4-9	Curies/canister	Allison 2004 [DIRS 168734]
	Hanford estimated radiochemical inventory in HLW, Basis 1/1/2030	Table 4-10	Curies	Hamel 2003 [DIRS 164947], Table 2
	HLW canister production estimates for Alt. Waste loading and canister fill levels	Table 4-11	Canisters	Hamel 2003 [DIRS 164947], p.1-9, Table 1-3
	Radionuclide half-lives, constants and conversion factors	Tables 4-3 and 4-12	Years, grams, mass per activity ( $m_i/a_i$ )	Parrington et al. 1996 [DIRS 103896]
	Half-life of $^{79}\text{Se}$	Table 4-3	Years	Singh 2002 [DIRS 164741]
	Half-life of $^{232}\text{Th}$	Table 4-3		Lide 1991 [DIRS 131202], p. 11 to 122
	List of Radionuclides	Tables 4-14 and 4-15	None	BSC 2002 [DIRS 160059], Tables 12 and 13; Parrington et al. 1996 [DIRS 103896]
	Radionuclides in crud	Appendix I.3 & I.4	Curies	BSC 2004 [DIRS 171407], Table 2 BSC 2004 [DIRS 171435], Table 8
	Radionuclide inventory in hardware	Table 16	Curies	BSC 2004 [DIRS 171435] BSC 2004 [DIRS 171436]