532402

date: October 16, 2003

to: Memo to Records

from: J. W. Garner

technical review: Cliff Hansen

QA review: Mario Chavez

subject: CRA Marker Bed Concentrations

Vector 82 of Replicate 1 NUTS screening runs was screened in for transport out the Marker Beds. The amount was 1.025×10^{-7}, slightly above our screening value of 1.0×10^{-7}. In order to compute the concentrations at the Land Withdrawal Boundary for this vector, the following steps were taken.

1) ALGEBRA was run (PA_NUTS_ISO_CONC.COM) on the ISO NUTS results (NUT_CRA1_ISO_R1_S1_V082.CDB) for this vector with input file PA_NUTS_ISO_S1_CONC.INP. This converted the NUTS concentrations in kg per cubic meter to curies per liter and produced PA_NUTS_ISO_R1S1_CONC_V082.CDB.

2) SUMMARIZE was run on this ALGEBRA file (PA_NUTS_ISO_R1S1_CONC_V082.CDB) with input file PA_NUTS_ISO_S1_CONC.SMZ to extract these concentrations to an ASCII file (PA_NUTS_ISO_S1_CONC.TBL).

3) This ASCII file was processed with a Fortran file (MBCON.EXE) to determine the maximum concentrations at the Land Withdrawal Boundary.

These maximum concentrations are as follows:
^{241}Am 2.44×10^{-21} curies per liter
^{239}Pu 2.53×10^{-18} curies per liter
^{238}Pu 3.51×10^{-35} curies per liter
^{234}U 1.98×10^{-20} curies per liter
^{230}Th 2.36×10^{-21} curies per liter.

All files used in these calculations are stored in CMS library CRA1_NUTR1S1 under class CRA1A.