

## **APPENDIX E**

### **RESRAD RESULTS**

Appendix E  
RESRAD Results

From page 5 of RESRAD Output:				
	Ground (Direct Gamma Exposure)	Inhalation	Meat (Beef Consumption)	Soil (Soil Ingestion)
Risk per pCi/g:	9.145E-06	6.246E-09	1.501E-06	1.529E-08
Total Risk per pCi/g:	1.067E-05			

RESRAD Result = Target Cancer Risk of 1E-04 ÷ Total Risk per pCi/g =

<b>9.4</b>	<b>pCi/g Ra-226</b>
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Removal Action Level (RAL) = RESRAD Result + Background Threshold Value (BTV) = 9.4+ 1.3 =

<b>10.7</b>	<b>pCi/g Ra-226</b>
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Table of Contents

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Part III: Intake Quantities and Health Risk Factors

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Cancer Risk Slope Factors .....	2
Risk Slope and ETFG for the Ground Pathway .....	4
Amount of Intake Quantities and Excess Cancer Risks	
Time= 0.000E+00 .....	5
Time= 1.000E+00 .....	8
Time= 3.000E+00 .....	11
Time= 1.000E+01 .....	14
Time= 3.000E+01 .....	17
Time= 1.000E+02 .....	20
Time= 3.000E+02 .....	23
Time= 1.000E+03 .....	26

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Cancer Risk Slope Factors Summary Table

Risk Library: DCFPAK3.02 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Ac-227+D	1.63E-06	1.98E-10	SLPF ( 1,1)
Sf-1	Pa-231	1.27E-07	1.27E-07	SLPF ( 2,1)
Sf-1	Pb-210+D	4.25E-09	1.48E-09	SLPF ( 3,1)
Sf-1	Pb-210+D1	1.72E-08	1.48E-09	SLPF ( 4,1)
Sf-1	Po-210	4.51E-11	4.51E-11	SLPF ( 5,1)
Sf-1	Ra-226+D	8.37E-06	2.50E-08	SLPF ( 6,1)
Sf-1	Th-230	8.45E-10	8.45E-10	SLPF ( 8,1)
Sf-1	U-234	2.53E-10	2.53E-10	SLPF (10,1)
Sf-1	U-235+D	5.76E-07	5.51E-07	SLPF (12,1)
Sf-1	U-238	1.24E-10	1.24E-10	SLPF (13,1)
Sf-1	U-238+D	1.19E-07	1.24E-10	SLPF (14,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Ac-227+D	2.13E-07	1.49E-07	SLPF ( 1,2)
Sf-2	Pa-231	7.62E-08	7.62E-08	SLPF ( 2,2)
Sf-2	Pb-210+D	1.63E-08	1.59E-08	SLPF ( 3,2)
Sf-2	Pb-210+D1	1.63E-08	1.59E-08	SLPF ( 4,2)
Sf-2	Po-210	1.45E-08	1.45E-08	SLPF ( 5,2)
Sf-2	Ra-226+D	2.82E-08	2.81E-08	SLPF ( 6,2)
Sf-2	Th-230	3.41E-08	3.41E-08	SLPF ( 8,2)
Sf-2	U-234	2.78E-08	2.78E-08	SLPF (10,2)
Sf-2	U-235+D	2.50E-08	2.50E-08	SLPF (12,2)
Sf-2	U-238	2.36E-08	2.36E-08	SLPF (13,2)
Sf-2	U-238+D	2.37E-08	2.36E-08	SLPF (14,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	6.54E-10	2.45E-10	SLPF ( 1,3)
Sf-3	Pa-231	2.26E-10	2.26E-10	SLPF ( 2,3)
Sf-3	Pb-210+D	1.19E-09	1.18E-09	SLPF ( 3,3)
Sf-3	Pb-210+D1	1.19E-09	1.18E-09	SLPF ( 4,3)
Sf-3	Po-210	2.25E-09	2.25E-09	SLPF ( 5,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF ( 6,3)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF ( 8,3)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF (10,3)
Sf-3	U-235+D	9.76E-11	9.43E-11	SLPF (12,3)
Sf-3	U-238	8.66E-11	8.66E-11	SLPF (13,3)
Sf-3	U-238+D	1.21E-10	8.66E-11	SLPF (14,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	4.87E-10	2.01E-10	SLPF ( 1,4)
Sf-3	Pa-231	1.72E-10	1.72E-10	SLPF ( 2,4)
Sf-3	Pb-210+D	8.93E-10	8.84E-10	SLPF ( 3,4)
Sf-3	Pb-210+D1	8.93E-10	8.84E-10	SLPF ( 4,4)
Sf-3	Po-210	1.78E-09	1.78E-09	SLPF ( 5,4)
Sf-3	Ra-226+D	3.85E-10	3.85E-10	SLPF ( 6,4)
Sf-3	Th-230	9.14E-11	9.14E-11	SLPF ( 8,4)
Sf-3	U-234	7.07E-11	7.07E-11	SLPF (10,4)
Sf-3	U-235+D	7.17E-11	6.95E-11	SLPF (12,4)
Sf-3	U-238	6.40E-11	6.40E-11	SLPF (13,4)

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## Cancer Risk Slope Factors Summary Table (continued)

Risk Library: DCFPAK3.02 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-3	U-238+D	8.71E-11	6.40E-11	SLPF( 14,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	6.54E-10	2.45E-10	SLPF( 1,5)
Sf-3	Pa-231	2.26E-10	2.26E-10	SLPF( 2,5)
Sf-3	Pb-210+D	1.19E-09	1.18E-09	SLPF( 3,5)
Sf-3	Pb-210+D1	1.19E-09	1.18E-09	SLPF( 4,5)
Sf-3	Po-210	2.25E-09	2.25E-09	SLPF( 5,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF( 6,5)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF( 8,5)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF( 10,5)
Sf-3	U-235+D	9.76E-11	9.43E-11	SLPF( 12,5)
Sf-3	U-238	8.66E-11	8.66E-11	SLPF( 13,5)
Sf-3	U-238+D	1.21E-10	8.66E-11	SLPF( 14,5)
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			
Sf-Rn	Rn-222	1.80E-12	1.80E-12	SLPFRN(1,1)
Sf-Rn	Po-218	3.70E-12	3.70E-12	SLPFRN(1,2)
Sf-Rn	Pb-214	6.20E-12	6.20E-12	SLPFRN(1,3)
Sf-Rn	Bi-214	1.50E-11	1.50E-11	SLPFRN(1,4)
Sf-Rn	Radon K factors, (mrem/WLM):			
Sf-Rn	Rn-222 Indoor	3.88E+02	3.88E+02	KFACTR(1,1)
Sf-Rn	Rn-222 Outdoor	3.88E+02	3.88E+02	KFACTR(1,2)

\*Base Case means Default.Lib w/o Associate Nuclide contributions.

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## Risk Slope and Environmental Transport Factors for the Ground Pathway

Nuclide (i)	Slope(i) *		ETFG(i,t) At Time in Years (dimensionless)						
	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	1.990E-10	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
At-218	2.740E-11	4.365E-02	4.365E-02	4.365E-02	4.365E-02	4.365E-02	4.365E-02	4.365E-02	4.365E-02
At-219	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Bi-210	2.770E-09	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Bi-211	1.900E-07	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Bi-214	7.340E-06	4.365E-02	4.365E-02	4.365E-02	4.365E-02	4.365E-02	4.365E-02	4.365E-02	4.365E-02
Bi-215	1.080E-06	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Fr-223	1.350E-07	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Hg-206	4.830E-07	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Pa-231	1.270E-07	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Pa-234	6.620E-06	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Pa-234m	9.060E-08	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Pb-210	1.480E-09	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Pb-211	2.910E-07	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Pb-214	9.940E-07	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Po-210	4.510E-11	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Po-211	3.760E-08	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Po-214	3.850E-10	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Po-215	7.480E-10	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Po-218	6.840E-15	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Ra-223	4.550E-07	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Ra-226	2.500E-08	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Rn-218	3.390E-09	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Rn-219	2.350E-07	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Rn-222	1.690E-09	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Th-227	4.450E-07	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Th-230	8.450E-10	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Th-231	2.490E-08	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Th-234	1.780E-08	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Tl-206	6.110E-09	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Tl-207	1.590E-08	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
Tl-210	1.340E-05	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
U-234	2.530E-10	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
U-235	5.510E-07	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02	4.369E-02
U-238	1.240E-10	4.367E-02	4.367E-02	4.367E-02	4.367E-02	4.367E-02	4.367E-02	4.367E-02	4.367E-02

\* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As pCi/yr at t= 0.000E+00 years

Radio- Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	6.661E-05	0.000E+00	3.979E-03	0.000E+00	5.922E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.901E-03
Pa-231	6.661E-05	0.000E+00	1.161E+00	0.000E+00	5.922E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.167E+00
Pb-210	1.625E-03	0.000E+00	4.530E+00	0.000E+00	1.444E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.674E+00
Po-210	1.625E-03	0.000E+00	2.346E+01	0.000E+00	1.444E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.360E+01
Ra-226	1.625E-03	0.000E+00	8.898E+00	0.000E+00	1.444E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.043E+00
Th-230	1.625E-03	0.000E+00	4.691E-01	0.000E+00	1.444E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.136E-01
U-234	1.625E-03	0.000E+00	1.650E+00	0.000E+00	1.444E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.794E+00
U-235	6.661E-05	0.000E+00	6.765E-02	0.000E+00	5.922E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.357E-02
U-238	1.625E-03	0.000E+00	1.650E+00	0.000E+00	1.444E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.794E+00

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil  
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of  
Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	6.795E-08	0.0064	3.309E-10	0.0000	0.000E+00	0.0000	9.246E-11	0.0000	0.000E+00	0.0000	9.019E-11	0.0000
Pa-231	5.503E-09	0.0005	1.228E-10	0.0000	0.000E+00	0.0000	6.338E-09	0.0006	0.000E+00	0.0000	3.233E-11	0.0000
Pb-210	4.559E-09	0.0004	6.511E-10	0.0001	0.000E+00	0.0000	1.327E-07	0.0124	0.000E+00	0.0000	4.216E-09	0.0004
Po-210	4.808E-11	0.0000	5.748E-10	0.0001	0.000E+00	0.0000	1.240E-06	0.1163	0.000E+00	0.0000	7.940E-09	0.0007
Ra-226	8.915E-06	0.8357	1.119E-09	0.0001	0.000E+00	0.0000	1.119E-07	0.0105	0.000E+00	0.0000	1.816E-09	0.0002
Th-230	9.229E-10	0.0001	1.384E-09	0.0001	0.000E+00	0.0000	1.397E-09	0.0001	0.000E+00	0.0000	4.300E-10	0.0000
U-234	2.674E-10	0.0000	1.093E-09	0.0001	0.000E+00	0.0000	3.810E-09	0.0004	0.000E+00	0.0000	3.335E-10	0.0000
U-235	2.495E-08	0.0023	4.030E-11	0.0000	0.000E+00	0.0000	1.597E-10	0.0000	0.000E+00	0.0000	1.397E-11	0.0000
U-238	1.259E-07	0.0118	9.302E-10	0.0001	0.000E+00	0.0000	4.810E-09	0.0005	0.000E+00	0.0000	4.210E-10	0.0000
Total	9.145E-06	0.8572	6.246E-09	0.0006	0.000E+00	0.0000	1.501E-06	0.1407	0.000E+00	0.0000	1.529E-08	0.0014

Derived Concentration Guideline Level (DCGL) = Target Cancer Morbidity Risk (1E-04) ÷ Total Risk across from  
each Radionuclide across All Pathways (1.07E-05) = **9.4 pCi/g Ra-226.**

Action Level = DCGL + Background Threshold Value (1.3 pCi/g) = **10.7 pCi/g Ra-226.**

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 0.000E+00 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.847E-08	0.0064
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.200E-08	0.0011
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.422E-07	0.0133
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.249E-06	0.1171
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.030E-06	0.8464
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E-09	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.504E-09	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.517E-08	0.0024
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-07	0.0124
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.067E-05	1.0000

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of  
Radon and its Decay Products at t= 0.000E+00 years

## Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent



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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 0.000E+00 years

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.687E-08	0.0044	2.282E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.182E-11	0.0000	0.000E+00	0.0000	6.220E-11	0.0000
Pa-231	2.659E-08	0.0025	2.254E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.387E-09	0.0006	0.000E+00	0.0000	6.030E-11	0.0000
Pb-210	3.209E-09	0.0003	8.480E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	9.423E-07	0.0883	0.000E+00	0.0000	8.385E-09	0.0008
Po-210	1.069E-12	0.0000	1.279E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.870E-08	0.0027	0.000E+00	0.0000	1.766E-10	0.0000
Ra-226	8.868E-06	0.8313	1.477E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	5.117E-07	0.0480	0.000E+00	0.0000	5.387E-09	0.0005
Th-230	4.940E-08	0.0046	1.391E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.515E-09	0.0003	0.000E+00	0.0000	4.535E-10	0.0000
U-234	2.711E-10	0.0000	1.093E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.810E-09	0.0004	0.000E+00	0.0000	3.335E-10	0.0000
U-235	2.496E-08	0.0023	4.035E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.613E-10	0.0000	0.000E+00	0.0000	1.399E-11	0.0000
U-238	1.259E-07	0.0118	9.302E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.810E-09	0.0005	0.000E+00	0.0000	4.210E-10	0.0000
Total	9.145E-06	0.8572	6.246E-09	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	1.501E-06	0.1407	0.000E+00	0.0000	1.529E-08	0.0014

Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 0.000E+00 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.720E-08	0.0044
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.326E-08	0.0031
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.547E-07	0.0895
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.889E-08	0.0027
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.386E-06	0.8799
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.476E-08	0.0051
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.508E-09	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.517E-08	0.0024
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-07	0.0124
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.067E-05	1.0000

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
As pCi/yr at t= 1.000E+00 years

Radio- Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	6.617E-05	0.000E+00	5.968E-03	0.000E+00	5.883E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.185E-02
Pa-231	6.643E-05	0.000E+00	1.158E+00	0.000E+00	5.906E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.164E+00
Pb-210	1.622E-03	0.000E+00	4.541E+00	0.000E+00	1.442E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.686E+00
Po-210	1.614E-03	0.000E+00	2.241E+01	0.000E+00	1.435E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.255E+01
Ra-226	1.621E-03	0.000E+00	8.883E+00	0.000E+00	1.442E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.027E+00
Th-230	1.625E-03	0.000E+00	4.691E-01	0.000E+00	1.444E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.136E-01
U-234	1.620E-03	0.000E+00	1.646E+00	0.000E+00	1.441E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.790E+00
U-235	6.643E-05	0.000E+00	6.748E-02	0.000E+00	5.906E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.339E-02
U-238	1.620E-03	0.000E+00	1.646E+00	0.000E+00	1.441E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.790E+00

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil  
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of  
Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+00 years

Radio- Nuclide	Water Independent Pathways (Inhalation excludes radon)											
	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	6.759E-08	0.0063	3.291E-10	0.0000	0.000E+00	0.0000	9.214E-11	0.0000	0.000E+00	0.0000	8.971E-11	0.0000
Pa-231	5.488E-09	0.0005	1.225E-10	0.0000	0.000E+00	0.0000	6.321E-09	0.0006	0.000E+00	0.0000	3.224E-11	0.0000
Pb-210	4.552E-09	0.0004	6.502E-10	0.0001	0.000E+00	0.0000	1.326E-07	0.0124	0.000E+00	0.0000	4.210E-09	0.0004
Po-210	4.800E-11	0.0000	5.739E-10	0.0001	0.000E+00	0.0000	1.238E-06	0.1163	0.000E+00	0.0000	7.927E-09	0.0007
Ra-226	8.898E-06	0.8357	1.117E-09	0.0001	0.000E+00	0.0000	1.117E-07	0.0105	0.000E+00	0.0000	1.813E-09	0.0002
Th-230	9.229E-10	0.0001	1.384E-09	0.0001	0.000E+00	0.0000	1.397E-09	0.0001	0.000E+00	0.0000	4.300E-10	0.0000
U-234	2.667E-10	0.0000	1.090E-09	0.0001	0.000E+00	0.0000	3.800E-09	0.0004	0.000E+00	0.0000	3.326E-10	0.0000
U-235	2.489E-08	0.0023	4.019E-11	0.0000	0.000E+00	0.0000	1.592E-10	0.0000	0.000E+00	0.0000	1.394E-11	0.0000
U-238	1.255E-07	0.0118	9.277E-10	0.0001	0.000E+00	0.0000	4.798E-09	0.0005	0.000E+00	0.0000	4.199E-10	0.0000
Total	9.127E-06	0.8572	6.235E-09	0.0006	0.000E+00	0.0000	1.499E-06	0.1408	0.000E+00	0.0000	1.527E-08	0.0014

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+00 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.810E-08	0.0064
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.196E-08	0.0011
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.420E-07	0.0133
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.247E-06	0.1171
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.013E-06	0.8464
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E-09	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.490E-09	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.510E-08	0.0024
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.317E-07	0.0124
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.065E-05	1.0000

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of  
Radon and its Decay Products at t= 1.000E+00 years

## Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+00 years

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.510E-08	0.0042	2.196E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.024E-11	0.0000	0.000E+00	0.0000	5.986E-11	0.0000
Pa-231	2.798E-08	0.0026	2.319E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.371E-09	0.0006	0.000E+00	0.0000	6.208E-11	0.0000
Pb-210	3.107E-09	0.0003	8.313E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	9.355E-07	0.0879	0.000E+00	0.0000	8.261E-09	0.0008
Po-210	1.694E-13	0.0000	2.025E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.547E-09	0.0004	0.000E+00	0.0000	2.798E-11	0.0000
Ra-226	8.847E-06	0.8309	1.500E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	5.399E-07	0.0507	0.000E+00	0.0000	5.635E-09	0.0005
Th-230	5.324E-08	0.0050	1.392E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.743E-09	0.0004	0.000E+00	0.0000	4.559E-10	0.0000
U-234	2.709E-10	0.0000	1.090E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.800E-09	0.0004	0.000E+00	0.0000	3.326E-10	0.0000
U-235	2.489E-08	0.0023	4.025E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.610E-10	0.0000	0.000E+00	0.0000	1.395E-11	0.0000
U-238	1.255E-07	0.0118	9.277E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.798E-09	0.0005	0.000E+00	0.0000	4.199E-10	0.0000
Total	9.127E-06	0.8572	6.235E-09	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	1.499E-06	0.1408	0.000E+00	0.0000	1.527E-08	0.0014

Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+00 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.542E-08	0.0043
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.464E-08	0.0033
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.477E-07	0.0890
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.577E-09	0.0004
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.394E-06	0.8823
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.883E-08	0.0055
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.494E-09	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-08	0.0024
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.317E-07	0.0124
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.065E-05	1.0000

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As pCi/yr at t= 3.000E+00 years

Radio- Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	6.534E-05	0.000E+00	5.907E-03	0.000E+00	5.809E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.172E-02
Pa-231	6.608E-05	0.000E+00	1.152E+00	0.000E+00	5.875E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.158E+00
Pb-210	1.618E-03	0.000E+00	4.529E+00	0.000E+00	1.438E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.673E+00
Po-210	1.608E-03	0.000E+00	2.232E+01	0.000E+00	1.429E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.247E+01
Ra-226	1.615E-03	0.000E+00	8.849E+00	0.000E+00	1.436E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.993E+00
Th-230	1.625E-03	0.000E+00	4.691E-01	0.000E+00	1.444E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.136E-01
U-234	1.612E-03	0.000E+00	1.637E+00	0.000E+00	1.433E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.780E+00
U-235	6.608E-05	0.000E+00	6.713E-02	0.000E+00	5.875E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.300E-02
U-238	1.612E-03	0.000E+00	1.637E+00	0.000E+00	1.433E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.780E+00

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil  
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of  
Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	6.689E-08	0.0063	3.257E-10	0.0000	0.000E+00	0.0000	9.134E-11	0.0000	0.000E+00	0.0000	8.878E-11	0.0000
Pa-231	5.459E-09	0.0005	1.218E-10	0.0000	0.000E+00	0.0000	6.288E-09	0.0006	0.000E+00	0.0000	3.207E-11	0.0000
Pb-210	4.538E-09	0.0004	6.482E-10	0.0001	0.000E+00	0.0000	1.321E-07	0.0125	0.000E+00	0.0000	4.197E-09	0.0004
Po-210	4.786E-11	0.0000	5.721E-10	0.0001	0.000E+00	0.0000	1.234E-06	0.1164	0.000E+00	0.0000	7.903E-09	0.0007
Ra-226	8.864E-06	0.8357	1.113E-09	0.0001	0.000E+00	0.0000	1.113E-07	0.0105	0.000E+00	0.0000	1.806E-09	0.0002
Th-230	9.229E-10	0.0001	1.384E-09	0.0001	0.000E+00	0.0000	1.397E-09	0.0001	0.000E+00	0.0000	4.300E-10	0.0000
U-234	2.652E-10	0.0000	1.085E-09	0.0001	0.000E+00	0.0000	3.780E-09	0.0004	0.000E+00	0.0000	3.308E-10	0.0000
U-235	2.475E-08	0.0023	3.998E-11	0.0000	0.000E+00	0.0000	1.584E-10	0.0000	0.000E+00	0.0000	1.386E-11	0.0000
U-238	1.249E-07	0.0118	9.228E-10	0.0001	0.000E+00	0.0000	4.772E-09	0.0004	0.000E+00	0.0000	4.177E-10	0.0000
Total	9.092E-06	0.8571	6.212E-09	0.0006	0.000E+00	0.0000	1.494E-06	0.1409	0.000E+00	0.0000	1.522E-08	0.0014

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+00 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.740E-08	0.0064
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.190E-08	0.0011
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.415E-07	0.0133
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.243E-06	0.1172
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.979E-06	0.8464
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E-09	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.461E-09	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.497E-08	0.0024
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.310E-07	0.0123
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.061E-05	1.0000

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of  
Radon and its Decay Products at t= 3.000E+00 years

## Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+00 years

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.176E-08	0.0039	2.033E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.726E-11	0.0000	0.000E+00	0.0000	5.543E-11	0.0000
Pa-231	3.058E-08	0.0029	2.441E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.340E-09	0.0006	0.000E+00	0.0000	6.541E-11	0.0000
Pb-210	2.912E-09	0.0003	7.808E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	8.807E-07	0.0830	0.000E+00	0.0000	7.766E-09	0.0007
Po-210	4.250E-15	0.0000	5.081E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.141E-10	0.0000	0.000E+00	0.0000	7.019E-13	0.0000
Ra-226	8.806E-06	0.8302	1.543E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	5.940E-07	0.0560	0.000E+00	0.0000	6.108E-09	0.0006
Th-230	6.089E-08	0.0057	1.393E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.234E-09	0.0004	0.000E+00	0.0000	4.610E-10	0.0000
U-234	2.705E-10	0.0000	1.085E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.780E-09	0.0004	0.000E+00	0.0000	3.309E-10	0.0000
U-235	2.476E-08	0.0023	4.004E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.604E-10	0.0000	0.000E+00	0.0000	1.388E-11	0.0000
U-238	1.249E-07	0.0118	9.228E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.772E-09	0.0004	0.000E+00	0.0000	4.177E-10	0.0000
Total	9.092E-06	0.8571	6.212E-09	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	1.494E-06	0.1409	0.000E+00	0.0000	1.522E-08	0.0014

Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+00 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.206E-08	0.0040
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.723E-08	0.0035
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.922E-07	0.0841
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.148E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.408E-06	0.8869
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.697E-08	0.0063
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.466E-09	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.498E-08	0.0024
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.310E-07	0.0123
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.061E-05	1.0000

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As pCi/yr at t= 1.000E+01 years

Radio- Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	6.271E-05	0.000E+00	5.713E-03	0.000E+00	5.576E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.129E-02
Pa-231	6.486E-05	0.000E+00	1.131E+00	0.000E+00	5.767E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.136E+00
Pb-210	1.602E-03	0.000E+00	4.484E+00	0.000E+00	1.424E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.626E+00
Po-210	1.592E-03	0.000E+00	2.210E+01	0.000E+00	1.415E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.224E+01
Ra-226	1.594E-03	0.000E+00	8.733E+00	0.000E+00	1.417E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.874E+00
Th-230	1.625E-03	0.000E+00	4.691E-01	0.000E+00	1.444E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.135E-01
U-234	1.582E-03	0.000E+00	1.607E+00	0.000E+00	1.406E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.748E+00
U-235	6.486E-05	0.000E+00	6.589E-02	0.000E+00	5.767E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.166E-02
U-238	1.582E-03	0.000E+00	1.607E+00	0.000E+00	1.406E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.748E+00

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil  
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of  
Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	6.466E-08	0.0062	3.148E-10	0.0000	0.000E+00	0.0000	8.877E-11	0.0000	0.000E+00	0.0000	8.582E-11	0.0000
Pa-231	5.358E-09	0.0005	1.196E-10	0.0000	0.000E+00	0.0000	6.172E-09	0.0006	0.000E+00	0.0000	3.148E-11	0.0000
Pb-210	4.489E-09	0.0004	6.411E-10	0.0001	0.000E+00	0.0000	1.307E-07	0.0125	0.000E+00	0.0000	4.151E-09	0.0004
Po-210	4.733E-11	0.0000	5.659E-10	0.0001	0.000E+00	0.0000	1.221E-06	0.1166	0.000E+00	0.0000	7.817E-09	0.0007
Ra-226	8.748E-06	0.8356	1.099E-09	0.0001	0.000E+00	0.0000	1.098E-07	0.0105	0.000E+00	0.0000	1.782E-09	0.0002
Th-230	9.229E-10	0.0001	1.384E-09	0.0001	0.000E+00	0.0000	1.397E-09	0.0001	0.000E+00	0.0000	4.300E-10	0.0000
U-234	2.604E-10	0.0000	1.065E-09	0.0001	0.000E+00	0.0000	3.710E-09	0.0004	0.000E+00	0.0000	3.247E-10	0.0000
U-235	2.430E-08	0.0023	3.924E-11	0.0000	0.000E+00	0.0000	1.555E-10	0.0000	0.000E+00	0.0000	1.361E-11	0.0000
U-238	1.226E-07	0.0117	9.058E-10	0.0001	0.000E+00	0.0000	4.684E-09	0.0004	0.000E+00	0.0000	4.100E-10	0.0000
Total	8.971E-06	0.8569	6.133E-09	0.0006	0.000E+00	0.0000	1.478E-06	0.1411	0.000E+00	0.0000	1.505E-08	0.0014



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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+01 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.515E-08	0.0062
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.168E-08	0.0011
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.400E-07	0.0134
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.229E-06	0.1174
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.861E-06	0.8464
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E-09	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.360E-09	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.451E-08	0.0023
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.286E-07	0.0123
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.047E-05	1.0000

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of  
Radon and its Decay Products at t= 1.000E+01 years

## Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+01 years

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	3.191E-08	0.0030	1.554E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.847E-11	0.0000	0.000E+00	0.0000	4.235E-11	0.0000
Pa-231	3.810E-08	0.0036	2.789E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.229E-09	0.0006	0.000E+00	0.0000	7.492E-11	0.0000
Pb-210	2.318E-09	0.0002	6.217E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	7.013E-07	0.0670	0.000E+00	0.0000	6.184E-09	0.0006
Po-210	1.063E-20	0.0000	1.271E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.854E-16	0.0000	0.000E+00	0.0000	1.756E-18	0.0000
Ra-226	8.664E-06	0.8275	1.670E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	7.551E-07	0.0721	0.000E+00	0.0000	7.515E-09	0.0007
Th-230	8.737E-08	0.0083	1.398E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	6.290E-09	0.0006	0.000E+00	0.0000	4.817E-10	0.0000
U-234	2.702E-10	0.0000	1.065E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.711E-09	0.0004	0.000E+00	0.0000	3.248E-10	0.0000
U-235	2.431E-08	0.0023	3.934E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.584E-10	0.0000	0.000E+00	0.0000	1.363E-11	0.0000
U-238	1.226E-07	0.0117	9.058E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.684E-09	0.0004	0.000E+00	0.0000	4.100E-10	0.0000
Total	8.971E-06	0.8569	6.133E-09	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	1.478E-06	0.1411	0.000E+00	0.0000	1.505E-08	0.0014

Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+01 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.214E-08	0.0031
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.468E-08	0.0043
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.105E-07	0.0679
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.873E-16	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.428E-06	0.9005
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.554E-08	0.0091
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.371E-09	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.452E-08	0.0023
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.286E-07	0.0123
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.047E-05	1.0000

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
As pCi/yr at t= 3.000E+01 years

Radio- Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	5.705E-05	0.000E+00	5.273E-03	0.000E+00	5.072E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.034E-02
Pa-231	6.151E-05	0.000E+00	1.072E+00	0.000E+00	5.468E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.078E+00
Pb-210	1.552E-03	0.000E+00	4.344E+00	0.000E+00	1.380E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.482E+00
Po-210	1.542E-03	0.000E+00	2.141E+01	0.000E+00	1.371E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.155E+01
Ra-226	1.535E-03	0.000E+00	8.410E+00	0.000E+00	1.365E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.547E+00
Th-230	1.624E-03	0.000E+00	4.691E-01	0.000E+00	1.444E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.135E-01
U-234	1.500E-03	0.000E+00	1.524E+00	0.000E+00	1.334E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.657E+00
U-235	6.151E-05	0.000E+00	6.248E-02	0.000E+00	5.468E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.795E-02
U-238	1.500E-03	0.000E+00	1.524E+00	0.000E+00	1.334E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.657E+00

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil  
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of  
Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+01 years

Radio- Nuclide	Water Independent Pathways (Inhalation excludes radon)											
	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	5.961E-08	0.0059	2.902E-10	0.0000	0.000E+00	0.0000	8.266E-11	0.0000	0.000E+00	0.0000	7.912E-11	0.0000
Pa-231	5.081E-09	0.0005	1.134E-10	0.0000	0.000E+00	0.0000	5.853E-09	0.0006	0.000E+00	0.0000	2.985E-11	0.0000
Pb-210	4.341E-09	0.0004	6.200E-10	0.0001	0.000E+00	0.0000	1.264E-07	0.0125	0.000E+00	0.0000	4.015E-09	0.0004
Po-210	4.578E-11	0.0000	5.473E-10	0.0001	0.000E+00	0.0000	1.181E-06	0.1171	0.000E+00	0.0000	7.561E-09	0.0007
Ra-226	8.427E-06	0.8356	1.058E-09	0.0001	0.000E+00	0.0000	1.058E-07	0.0105	0.000E+00	0.0000	1.717E-09	0.0002
Th-230	9.228E-10	0.0001	1.384E-09	0.0001	0.000E+00	0.0000	1.397E-09	0.0001	0.000E+00	0.0000	4.300E-10	0.0000
U-234	2.469E-10	0.0000	1.009E-09	0.0001	0.000E+00	0.0000	3.518E-09	0.0003	0.000E+00	0.0000	3.079E-10	0.0000
U-235	2.304E-08	0.0023	3.721E-11	0.0000	0.000E+00	0.0000	1.474E-10	0.0000	0.000E+00	0.0000	1.290E-11	0.0000
U-238	1.162E-07	0.0115	8.589E-10	0.0001	0.000E+00	0.0000	4.442E-09	0.0004	0.000E+00	0.0000	3.888E-10	0.0000
Total	8.636E-06	0.8563	5.918E-09	0.0006	0.000E+00	0.0000	1.428E-06	0.1416	0.000E+00	0.0000	1.454E-08	0.0014

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+01 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.007E-08	0.0060
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-08	0.0011
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.354E-07	0.0134
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.189E-06	0.1179
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.535E-06	0.8463
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E-09	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.083E-09	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.324E-08	0.0023
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.219E-07	0.0121
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.009E-05	1.0000

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of  
Radon and its Decay Products at t= 3.000E+01 years

## Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+01 years

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.480E-08	0.0015	7.203E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-11	0.0000	0.000E+00	0.0000	1.964E-11	0.0000
Pa-231	4.987E-08	0.0049	3.314E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.917E-09	0.0006	0.000E+00	0.0000	8.927E-11	0.0000
Pb-210	1.209E-09	0.0001	3.242E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.657E-07	0.0363	0.000E+00	0.0000	3.225E-09	0.0003
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	8.270E-06	0.8200	1.872E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.034E-06	0.1026	0.000E+00	0.0000	9.938E-09	0.0010
Th-230	1.607E-07	0.0159	1.413E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.420E-08	0.0014	0.000E+00	0.0000	5.586E-10	0.0001
U-234	2.786E-10	0.0000	1.010E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.520E-09	0.0003	0.000E+00	0.0000	3.081E-10	0.0000
U-235	2.307E-08	0.0023	3.744E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.527E-10	0.0000	0.000E+00	0.0000	1.296E-11	0.0000
U-238	1.162E-07	0.0115	8.591E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.442E-09	0.0004	0.000E+00	0.0000	3.888E-10	0.0000
Total	8.636E-06	0.8563	5.918E-09	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	1.428E-06	0.1416	0.000E+00	0.0000	1.454E-08	0.0014

Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+01 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.490E-08	0.0015
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.621E-08	0.0056
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.705E-07	0.0367
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.316E-06	0.9238
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.769E-07	0.0175
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.117E-09	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.328E-08	0.0023
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.219E-07	0.0121
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.009E-05	1.0000

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As pCi/yr at t= 1.000E+02 years

Radio- Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	4.560E-05	0.000E+00	4.273E-03	0.000E+00	4.054E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.327E-03
Pa-231	5.107E-05	0.000E+00	8.902E-01	0.000E+00	4.541E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.947E-01
Pb-210	1.371E-03	0.000E+00	3.836E+00	0.000E+00	1.219E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.958E+00
Po-210	1.362E-03	0.000E+00	1.891E+01	0.000E+00	1.211E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.903E+01
Ra-226	1.349E-03	0.000E+00	7.392E+00	0.000E+00	1.200E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.512E+00
Th-230	1.624E-03	0.000E+00	4.690E-01	0.000E+00	1.444E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.134E-01
U-234	1.246E-03	0.000E+00	1.265E+00	0.000E+00	1.107E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.376E+00
U-235	5.107E-05	0.000E+00	5.188E-02	0.000E+00	4.541E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.642E-02
U-238	1.246E-03	0.000E+00	1.265E+00	0.000E+00	1.107E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.376E+00

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil  
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of  
Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.826E-08	0.0054	2.350E-10	0.0000	0.000E+00	0.0000	6.753E-11	0.0000	0.000E+00	0.0000	6.405E-11	0.0000
Pa-231	4.219E-09	0.0005	9.415E-11	0.0000	0.000E+00	0.0000	4.860E-09	0.0005	0.000E+00	0.0000	2.479E-11	0.0000
Pb-210	3.829E-09	0.0004	5.469E-10	0.0001	0.000E+00	0.0000	1.115E-07	0.0126	0.000E+00	0.0000	3.541E-09	0.0004
Po-210	4.038E-11	0.0000	4.828E-10	0.0001	0.000E+00	0.0000	1.042E-06	0.1175	0.000E+00	0.0000	6.669E-09	0.0008
Ra-226	7.413E-06	0.8364	9.309E-10	0.0001	0.000E+00	0.0000	9.305E-08	0.0105	0.000E+00	0.0000	1.510E-09	0.0002
Th-230	9.226E-10	0.0001	1.383E-09	0.0002	0.000E+00	0.0000	1.396E-09	0.0002	0.000E+00	0.0000	4.299E-10	0.0000
U-234	2.050E-10	0.0000	8.383E-10	0.0001	0.000E+00	0.0000	2.922E-09	0.0003	0.000E+00	0.0000	2.557E-10	0.0000
U-235	1.913E-08	0.0022	3.090E-11	0.0000	0.000E+00	0.0000	1.224E-10	0.0000	0.000E+00	0.0000	1.071E-11	0.0000
U-238	9.652E-08	0.0109	7.132E-10	0.0001	0.000E+00	0.0000	3.688E-09	0.0004	0.000E+00	0.0000	3.228E-10	0.0000
Total	7.586E-06	0.8559	5.255E-09	0.0006	0.000E+00	0.0000	1.259E-06	0.1421	0.000E+00	0.0000	1.283E-08	0.0014

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+02 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.862E-08	0.0055
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.198E-09	0.0010
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.194E-07	0.0135
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.049E-06	0.1183
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.508E-06	0.8471
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.132E-09	0.0005
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.221E-09	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.930E-08	0.0022
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.012E-07	0.0114
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.863E-06	1.0000

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of  
Radon and its Decay Products at t= 1.000E+02 years

## Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+02 years

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.004E-09	0.0001	4.888E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.958E-13	0.0000	0.000E+00	0.0000	1.332E-12	0.0000
Pa-231	5.138E-08	0.0058	3.236E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.915E-09	0.0006	0.000E+00	0.0000	8.733E-11	0.0000
Pb-210	1.238E-10	0.0000	3.321E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.746E-08	0.0042	0.000E+00	0.0000	3.303E-10	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	7.025E-06	0.7927	1.840E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.161E-06	0.1310	0.000E+00	0.0000	1.093E-08	0.0012
Th-230	3.919E-07	0.0442	1.469E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	4.917E-08	0.0055	0.000E+00	0.0000	8.895E-10	0.0001
U-234	3.975E-10	0.0000	8.393E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.941E-09	0.0003	0.000E+00	0.0000	2.562E-10	0.0000
U-235	1.923E-08	0.0022	3.154E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E-10	0.0000	0.000E+00	0.0000	1.089E-11	0.0000
U-238	9.652E-08	0.0109	7.135E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.689E-09	0.0004	0.000E+00	0.0000	3.229E-10	0.0000
Total	7.586E-06	0.8559	5.255E-09	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	1.259E-06	0.1421	0.000E+00	0.0000	1.283E-08	0.0014

Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+02 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.011E-09	0.0001
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.670E-08	0.0064
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.794E-08	0.0043
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.199E-06	0.9251
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.434E-07	0.0500
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.434E-09	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.941E-08	0.0022
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.012E-07	0.0114
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.863E-06	1.0000

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides



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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As pCi/yr at t= 3.000E+02 years

Radio- Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	2.672E-05	0.000E+00	2.507E-03	0.000E+00	2.376E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.882E-03
Pa-231	3.003E-05	0.000E+00	5.234E-01	0.000E+00	2.670E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.261E-01
Pb-210	9.682E-04	0.000E+00	2.710E+00	0.000E+00	8.608E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.796E+00
Po-210	9.622E-04	0.000E+00	1.336E+01	0.000E+00	8.555E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.345E+01
Ra-226	9.588E-04	0.000E+00	5.252E+00	0.000E+00	8.524E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.337E+00
Th-230	1.622E-03	0.000E+00	4.684E-01	0.000E+00	1.442E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.126E-01
U-234	7.324E-04	0.000E+00	7.440E-01	0.000E+00	6.512E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.091E-01
U-235	3.003E-05	0.000E+00	3.050E-02	0.000E+00	2.670E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.317E-02
U-238	7.324E-04	0.000E+00	7.440E-01	0.000E+00	6.512E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.091E-01

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil  
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of  
Radon and its Decay Products as pCi/yr at t= 3.000E+02 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.831E-08	0.0045	1.378E-10	0.0000	0.000E+00	0.0000	3.965E-11	0.0000	0.000E+00	0.0000	3.757E-11	0.0000
Pa-231	2.481E-09	0.0004	5.536E-11	0.0000	0.000E+00	0.0000	2.857E-09	0.0005	0.000E+00	0.0000	1.458E-11	0.0000
Pb-210	2.711E-09	0.0004	3.872E-10	0.0001	0.000E+00	0.0000	7.894E-08	0.0126	0.000E+00	0.0000	2.507E-09	0.0004
Po-210	2.859E-11	0.0000	3.418E-10	0.0001	0.000E+00	0.0000	7.374E-07	0.1173	0.000E+00	0.0000	4.722E-09	0.0008
Ra-226	5.281E-06	0.8399	6.632E-10	0.0001	0.000E+00	0.0000	6.629E-08	0.0105	0.000E+00	0.0000	1.076E-09	0.0002
Th-230	9.215E-10	0.0001	1.381E-09	0.0002	0.000E+00	0.0000	1.395E-09	0.0002	0.000E+00	0.0000	4.294E-10	0.0001
U-234	1.205E-10	0.0000	4.929E-10	0.0001	0.000E+00	0.0000	1.718E-09	0.0003	0.000E+00	0.0000	1.503E-10	0.0000
U-235	1.125E-08	0.0018	1.817E-11	0.0000	0.000E+00	0.0000	7.198E-11	0.0000	0.000E+00	0.0000	6.300E-12	0.0000
U-238	5.675E-08	0.0090	4.194E-10	0.0001	0.000E+00	0.0000	2.169E-09	0.0003	0.000E+00	0.0000	1.898E-10	0.0000
Total	5.383E-06	0.8562	3.897E-09	0.0006	0.000E+00	0.0000	8.909E-07	0.1417	0.000E+00	0.0000	9.133E-09	0.0015

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+02 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.852E-08	0.0045
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.408E-09	0.0009
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.455E-08	0.0134
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.425E-07	0.1181
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.349E-06	0.8507
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.127E-09	0.0007
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.481E-09	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-08	0.0018
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.953E-08	0.0095
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.287E-06	1.0000

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of  
Radon and its Decay Products at t= 3.000E+02 years

## Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+02 years

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.607E-13	0.0000	2.243E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.110E-16	0.0000	0.000E+00	0.0000	6.114E-16	0.0000
Pa-231	3.060E-08	0.0049	1.920E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.878E-09	0.0005	0.000E+00	0.0000	5.182E-11	0.0000
Pb-210	1.842E-13	0.0000	4.939E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.572E-11	0.0000	0.000E+00	0.0000	4.913E-13	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	4.407E-06	0.7009	1.175E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	7.523E-07	0.1197	0.000E+00	0.0000	7.069E-09	0.0011
Th-230	8.769E-07	0.1395	1.595E-09	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.315E-07	0.0209	0.000E+00	0.0000	1.662E-09	0.0003
U-234	1.196E-09	0.0002	4.954E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.867E-09	0.0003	0.000E+00	0.0000	1.525E-10	0.0000
U-235	1.144E-08	0.0018	1.936E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.105E-11	0.0000	0.000E+00	0.0000	6.621E-12	0.0000
U-238	5.675E-08	0.0090	4.198E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.170E-09	0.0003	0.000E+00	0.0000	1.899E-10	0.0000
Total	5.383E-06	0.8562	3.897E-09	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	8.909E-07	0.1417	0.000E+00	0.0000	9.133E-09	0.0015

Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+02 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.639E-13	0.0000
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.372E-08	0.0054
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.644E-11	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.167E-06	0.8218
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.012E-06	0.1609
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.710E-09	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.155E-08	0.0018
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.953E-08	0.0095
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.287E-06	1.0000

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As pCi/yr at t= 1.000E+03 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	4.165E-06	0.000E+00	3.907E-04	0.000E+00	3.703E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.609E-04
Pa-231	4.680E-06	0.000E+00	8.157E-02	0.000E+00	4.161E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.199E-02
Pb-210	4.209E-04	0.000E+00	1.178E+00	0.000E+00	3.742E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.216E+00
Po-210	4.180E-04	0.000E+00	5.804E+00	0.000E+00	3.717E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.841E+00
Ra-226	4.288E-04	0.000E+00	2.349E+00	0.000E+00	3.812E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.387E+00
Th-230	1.611E-03	0.000E+00	4.653E-01	0.000E+00	1.433E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.085E-01
U-234	1.141E-04	0.000E+00	1.160E-01	0.000E+00	1.015E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.261E-01
U-235	4.680E-06	0.000E+00	4.754E-03	0.000E+00	4.161E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.170E-03
U-238	1.141E-04	0.000E+00	1.160E-01	0.000E+00	1.015E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.261E-01

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil  
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of  
Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.412E-09	0.0016	2.148E-11	0.0000	0.000E+00	0.0000	6.179E-12	0.0000	0.000E+00	0.0000	5.856E-12	0.0000
Pa-231	3.866E-10	0.0001	8.627E-12	0.0000	0.000E+00	0.0000	4.453E-10	0.0002	0.000E+00	0.0000	2.272E-12	0.0000
Pb-210	1.192E-09	0.0004	1.702E-10	0.0001	0.000E+00	0.0000	3.470E-08	0.0124	0.000E+00	0.0000	1.102E-09	0.0004
Po-210	1.256E-11	0.0000	1.502E-10	0.0001	0.000E+00	0.0000	3.240E-07	0.1156	0.000E+00	0.0000	2.074E-09	0.0007
Ra-226	2.388E-06	0.8520	2.999E-10	0.0001	0.000E+00	0.0000	2.998E-08	0.0107	0.000E+00	0.0000	4.866E-10	0.0002
Th-230	9.153E-10	0.0003	1.372E-09	0.0005	0.000E+00	0.0000	1.385E-09	0.0005	0.000E+00	0.0000	4.265E-10	0.0002
U-234	1.879E-11	0.0000	7.681E-11	0.0000	0.000E+00	0.0000	2.677E-10	0.0001	0.000E+00	0.0000	2.343E-11	0.0000
U-235	1.753E-09	0.0006	2.831E-12	0.0000	0.000E+00	0.0000	1.122E-11	0.0000	0.000E+00	0.0000	9.818E-13	0.0000
U-238	8.845E-09	0.0032	6.536E-11	0.0000	0.000E+00	0.0000	3.380E-10	0.0001	0.000E+00	0.0000	2.958E-11	0.0000
Total	2.406E-06	0.8582	2.168E-09	0.0008	0.000E+00	0.0000	3.911E-07	0.1395	0.000E+00	0.0000	4.152E-09	0.0015

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+03 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.446E-09	0.0016
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.429E-10	0.0003
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.717E-08	0.0133
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.262E-07	0.1164
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.419E-06	0.8630
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.099E-09	0.0015
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.867E-10	0.0001
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.768E-09	0.0006
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.278E-09	0.0033
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.803E-06	1.0000

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of  
Radon and its Decay Products at t= 1.000E+03 years

## Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent      Water-dep. == Water-dependent

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+03 years

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	9.533E-25	0.0000	4.642E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.505E-28	0.0000	0.000E+00	0.0000	1.265E-27	0.0000
Pa-231	4.699E-09	0.0017	2.948E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.420E-10	0.0002	0.000E+00	0.0000	7.958E-12	0.0000
Pb-210	2.338E-23	0.0000	6.269E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.072E-21	0.0000	0.000E+00	0.0000	6.236E-23	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	8.611E-07	0.3072	2.297E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.470E-07	0.0525	0.000E+00	0.0000	1.382E-09	0.0005
Th-230	1.525E-06	0.5440	1.757E-09	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	2.423E-07	0.0864	0.000E+00	0.0000	2.700E-09	0.0010
U-234	4.199E-09	0.0015	8.208E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.227E-10	0.0003	0.000E+00	0.0000	3.090E-11	0.0000
U-235	1.852E-09	0.0007	3.457E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.078E-11	0.0000	0.000E+00	0.0000	1.151E-12	0.0000
U-238	8.848E-09	0.0032	6.558E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.392E-10	0.0001	0.000E+00	0.0000	2.965E-11	0.0000
Total	2.406E-06	0.8582	2.168E-09	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	3.911E-07	0.1395	0.000E+00	0.0000	4.152E-09	0.0015

Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+03 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.601E-25	0.0000
Pa-231	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.179E-09	0.0018
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.164E-21	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.010E-06	0.3602
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.772E-06	0.6321
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.235E-09	0.0019
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.878E-09	0.0007
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.282E-09	0.0033
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.803E-06	1.0000

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides