Table of Contents

Part III: Intake Quantities and Health Risk Factors

Cancer Risk Slope Factors 2
Risk Slope and ETFG for the Ground Pathway 3
Amount of Intake Quantities and Excess Cancer Risks
Time= 0.000E+00 4
Time= 1.000E+00 7
Time= 3.000E+00 10
Time= 1.000E+01 13
Time= 3.000E+01 16
Time= 1.000E+02 19
Time= 3.000E+02 22
Time= 1.000E+03 25

Cancer Risk Slope Factors Summary Table
Risk Library: FGR 13 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Cs-137+D	2.55E-06	5.32E-10	SLPF(1,1)
Sf-1	Pb-210+D	4.21E-09	1.41E-09	SLPF(2,1)
Sf-1	Ra-226+D	8.49E-06	2.29E-08	SLPF(3,1)
Sf-1	Sr-90+D	1.96E-08	4.82E-10	SLPF(4,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Cs-137+D	1.12E-10	1.12E-10	SLPF(1,2)
Sf-2	Pb-210+D	3.08E-08	1.58E-08	SLPF(2,2)
Sf-2	Ra-226+D	2.83E-08	2.82E-08	SLPF(3,2)
Sf-2	Sr-90+D	4.33E-10	4.25E-10	SLPF(4,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,3)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(2,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(3,3)
Sf-3	Sr-90+D	9.53E-11	6.88E-11	SLPF(4,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.04E-11	3.04E-11	SLPF(1,4)
Sf-3	Pb-210+D	2.66E-09	8.81E-10	SLPF(2,4)
Sf-3	Ra-226+D	3.86E-10	3.85E-10	SLPF(3,4)
Sf-3	Sr-90+D	7.40E-11	5.59E-11	SLPF(4,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,5)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(2,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(3,5)
Sf-3	Sr-90+D	9.53E-11	6.88E-11	SLPF(4,5)
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	7.60E+02	7.60E+02	KFACTR(1,1)
Sf-Rn	Rn-222 Outdoor	5.70E+02	5.70E+02	KFACTR(1,2)

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

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
At-218	3.570E-09	5.513E-01	5.513E-01	5.513E-01	5.513E-01	5.513E-01	5.513E-01	5.513E-01	5.513E-01
Ba-137m	2.690E-06	5.316E-01	5.316E-01	5.316E-01	5.316E-01	5.316E-01	5.316E-01	5.316E-01	5.316E-01
Bi-210	2.760E-09	5.402E-01	5.402E-01	5.402E-01	5.402E-01	5.402E-01	5.402E-01	5.402E-01	5.402E-01
Bi-214	7.480E-06	5.368E-01	5.368E-01	5.368E-01	5.368E-01	5.368E-01	5.368E-01	5.368E-01	5.368E-01
Cs-137	5.320E-10	5.466E-01	5.466E-01	5.466E-01	5.466E-01	5.466E-01	5.466E-01	5.466E-01	5.466E-01
Pb-210	1.410E-09	5.551E-01	5.551E-01	5.551E-01	5.551E-01	5.551E-01	5.551E-01	5.551E-01	5.551E-01
Pb-214	9.820E-07	5.402E-01	5.402E-01	5.402E-01	5.402E-01	5.402E-01	5.402E-01	5.402E-01	5.402E-01
Po-210	3.950E-11	5.352E-01	5.352E-01	5.352E-01	5.352E-01	5.352E-01	5.352E-01	5.352E-01	5.352E-01
Po-214	3.860E-10	5.316E-01	5.316E-01	5.316E-01	5.316E-01	5.316E-01	5.316E-01	5.316E-01	5.316E-01
Po-218	4.260E-11	5.352E-01	5.352E-01	5.352E-01	5.352E-01	5.352E-01	5.352E-01	5.352E-01	5.352E-01
Ra-226	2.290E-08	5.488E-01	5.488E-01	5.488E-01	5.488E-01	5.488E-01	5.488E-01	5.488E-01	5.488E-01
Rn-222	1.740E-09	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01
Sr-90	4.820E-10	5.486E-01	5.486E-01	5.486E-01	5.486E-01	5.486E-01	5.486E-01	5.486E-01	5.486E-01
Tl-210	0.000E+00	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01
Y-90	1.910E-08	5.352E-01	5.352E-01	5.352E-01	5.352E-01	5.352E-01	5.352E-01	5.352E-01	5.352E-01

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

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-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Cs-137	1.155E-03	7.724E+01	6.754E+00	2.205E+00	6.076E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.681E+01
Pb-210	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	0.000E+00	0.000E+00
Ra-226	1.306E-03	8.732E+01	2.545E-01	3.116E-01	6.868E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.857E+01
Sr-90	6.327E-03	3.174E+03	6.404E+01	1.902E+01	3.329E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.260E+03

* 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	Radionuclides							
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

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-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.732E-07	0.0539	2.798E-12	0.0000	6.249E-08	0.0050	5.464E-09	0.0004	1.784E-09	0.0001	4.915E-10	0.0000
Pb-210	5.988E-10	0.0000	4.030E-10	0.0000	7.609E-07	0.0610	2.651E-09	0.0002	1.279E-09	0.0001	2.373E-08	0.0019
Ra-226	3.411E-06	0.2732	1.062E-09	0.0001	1.293E-06	0.1036	3.771E-09	0.0003	4.617E-09	0.0004	1.017E-08	0.0008
Sr-90	2.636E-08	0.0021	5.472E-11	0.0000	6.036E-06	0.4835	1.219E-07	0.0098	3.618E-08	0.0029	6.330E-09	0.0005
Total	4.111E-06	0.3293	1.522E-09	0.0001	8.153E-06	0.6531	1.338E-07	0.0107	4.386E-08	0.0035	4.073E-08	0.0033

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-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	7.434E-07	0.0596
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	7.896E-07	0.0633
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	4.724E-06	0.3784
Sr-90	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	6.227E-06	0.4988
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	1.248E-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

Radon	Radionuclides							
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

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-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.732E-07	0.0539	2.798E-12	0.0000	0.000E+00	0.0000	6.249E-08	0.0050	5.464E-09	0.0004	1.784E-09	0.0001	4.915E-10	0.0000
Ra-226	3.411E-06	0.2733	1.465E-09	0.0001	0.000E+00	0.0000	2.054E-06	0.1646	6.422E-09	0.0005	5.895E-09	0.0005	3.391E-08	0.0027
Sr-90	2.636E-08	0.0021	5.472E-11	0.0000	0.000E+00	0.0000	6.036E-06	0.4835	1.219E-07	0.0098	3.618E-08	0.0029	6.330E-09	0.0005
Total	4.111E-06	0.3293	1.522E-09	0.0001	0.000E+00	0.0000	8.153E-06	0.6531	1.338E-07	0.0107	4.386E-08	0.0035	4.073E-08	0.0033

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-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	7.434E-07	0.0596
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	5.513E-06	0.4416
Sr-90	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	6.227E-06	0.4988
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	1.248E-05	1.0000

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

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-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Cs-137	1.129E-03	7.547E+01	6.600E+00	2.155E+00	5.937E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.482E+01
Pb-210	3.987E-05	7.386E-01	3.075E-03	1.352E-03	2.097E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.640E-01
Ra-226	1.302E-03	8.708E+01	2.539E-01	3.108E-01	6.849E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.833E+01
Sr-90	6.144E-03	3.082E+03	6.225E+01	1.848E+01	3.232E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.166E+03

* 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	Radionuclides							
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

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 Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.578E-07	0.0534	2.734E-12	0.0000	6.106E-08	0.0050	5.339E-09	0.0004	1.743E-09	0.0001	4.803E-10	0.0000
Pb-210	6.319E-10	0.0001	4.253E-10	0.0000	8.033E-07	0.0652	2.801E-09	0.0002	1.350E-09	0.0001	2.505E-08	0.0020
Ra-226	3.401E-06	0.2761	1.059E-09	0.0001	1.290E-06	0.1047	3.760E-09	0.0003	4.604E-09	0.0004	1.014E-08	0.0008
Sr-90	2.560E-08	0.0021	5.314E-11	0.0000	5.862E-06	0.4759	1.184E-07	0.0096	3.514E-08	0.0029	6.147E-09	0.0005
Total	4.085E-06	0.3317	1.540E-09	0.0001	8.016E-06	0.6508	1.303E-07	0.0106	4.284E-08	0.0035	4.182E-08	0.0034

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-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	7.264E-07	0.0590
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	8.335E-07	0.0677
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	4.711E-06	0.3824
Sr-90	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	6.047E-06	0.4909
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	1.232E-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

Radon	Radionuclides							
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

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-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.578E-07	0.0534	2.734E-12	0.0000	0.000E+00	0.0000	6.106E-08	0.0050	5.339E-09	0.0004	1.743E-09	0.0001	4.803E-10	0.0000
Ra-226	3.402E-06	0.2762	1.484E-09	0.0001	0.000E+00	0.0000	2.093E-06	0.1699	6.561E-09	0.0005	5.954E-09	0.0005	3.519E-08	0.0029
Sr-90	2.560E-08	0.0021	5.314E-11	0.0000	0.000E+00	0.0000	5.862E-06	0.4759	1.184E-07	0.0096	3.514E-08	0.0029	6.147E-09	0.0005
Total	4.085E-06	0.3317	1.540E-09	0.0001	0.000E+00	0.0000	8.016E-06	0.6508	1.303E-07	0.0106	4.284E-08	0.0035	4.182E-08	0.0034

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-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	7.264E-07	0.0590
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	5.544E-06	0.4501
Sr-90	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	6.047E-06	0.4909
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	1.232E-05	1.0000

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

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-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Cs-137	1.077E-03	7.206E+01	6.301E+00	2.058E+00	5.668E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.099E+01
Pb-210	1.155E-04	2.002E+00	7.393E-03	3.456E-03	6.074E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.074E+00
Ra-226	1.295E-03	8.659E+01	2.525E-01	3.091E-01	6.811E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.783E+01
Sr-90	5.794E-03	2.907E+03	5.870E+01	1.743E+01	3.048E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.986E+03

* 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	Radionuclides							
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

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-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.280E-07	0.0524	2.610E-12	0.0000	5.829E-08	0.0049	5.098E-09	0.0004	1.664E-09	0.0001	4.586E-10	0.0000
Pb-210	6.946E-10	0.0001	4.675E-10	0.0000	8.822E-07	0.0735	3.070E-09	0.0003	1.481E-09	0.0001	2.753E-08	0.0023
Ra-226	3.382E-06	0.2820	1.053E-09	0.0001	1.282E-06	0.1069	3.739E-09	0.0003	4.578E-09	0.0004	1.009E-08	0.0008
Sr-90	2.414E-08	0.0020	5.011E-11	0.0000	5.528E-06	0.4608	1.116E-07	0.0093	3.314E-08	0.0028	5.797E-09	0.0005
Total	4.035E-06	0.3364	1.573E-09	0.0001	7.751E-06	0.6461	1.235E-07	0.0103	4.086E-08	0.0034	4.387E-08	0.0037

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-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	6.936E-07	0.0578
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	9.154E-07	0.0763
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	4.684E-06	0.3905
Sr-90	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	5.703E-06	0.4754
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	1.200E-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

Radon	Radionuclides							
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

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-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.280E-07	0.0524	2.610E-12	0.0000	0.000E+00	0.0000	5.829E-08	0.0049	5.098E-09	0.0004	1.664E-09	0.0001	4.586E-10	0.0000
Ra-226	3.383E-06	0.2820	1.521E-09	0.0001	0.000E+00	0.0000	2.165E-06	0.1804	6.809E-09	0.0006	6.059E-09	0.0005	3.762E-08	0.0031
Sr-90	2.414E-08	0.0020	5.011E-11	0.0000	0.000E+00	0.0000	5.528E-06	0.4608	1.116E-07	0.0093	3.314E-08	0.0028	5.797E-09	0.0005
Total	4.035E-06	0.3364	1.573E-09	0.0001	0.000E+00	0.0000	7.751E-06	0.6461	1.235E-07	0.0103	4.086E-08	0.0034	4.387E-08	0.0037

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-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	6.936E-07	0.0578
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	5.600E-06	0.4668
Sr-90	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	5.703E-06	0.4754
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	1.200E-05	1.0000

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

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-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Cs-137	9.163E-04	6.128E+01	5.359E+00	1.750E+00	4.821E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.887E+01
Pb-210	3.410E-04	5.772E+00	2.027E-02	9.733E-03	1.794E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.982E+00
Ra-226	1.269E-03	8.491E+01	2.476E-01	3.031E-01	6.678E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.612E+01
Sr-90	4.719E-03	2.368E+03	4.781E+01	1.419E+01	2.483E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.432E+03

* 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	Radionuclides							
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

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-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	5.341E-07	0.0486	2.220E-12	0.0000	4.958E-08	0.0045	4.335E-09	0.0004	1.416E-09	0.0001	3.900E-10	0.0000
Pb-210	8.799E-10	0.0001	5.922E-10	0.0001	1.116E-06	0.1016	3.867E-09	0.0004	1.870E-09	0.0002	3.488E-08	0.0032
Ra-226	3.316E-06	0.3019	1.033E-09	0.0001	1.257E-06	0.1145	3.666E-09	0.0003	4.489E-09	0.0004	9.891E-09	0.0009
Sr-90	1.966E-08	0.0018	4.081E-11	0.0000	4.502E-06	0.4098	9.092E-08	0.0083	2.699E-08	0.0025	4.721E-09	0.0004
Total	3.871E-06	0.3524	1.668E-09	0.0002	6.925E-06	0.6304	1.028E-07	0.0094	3.477E-08	0.0032	4.988E-08	0.0045

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-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	5.898E-07	0.0537
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	1.158E-06	0.1054
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	4.593E-06	0.4181
Sr-90	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	4.645E-06	0.4228
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	1.099E-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

Radon	Radionuclides							
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

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-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	5.341E-07	0.0486	2.220E-12	0.0000	0.000E+00	0.0000	4.958E-08	0.0045	4.335E-09	0.0004	1.416E-09	0.0001	3.900E-10	0.0000
Ra-226	3.317E-06	0.3020	1.625E-09	0.0001	0.000E+00	0.0000	2.373E-06	0.2160	7.533E-09	0.0007	6.359E-09	0.0006	4.477E-08	0.0041
Sr-90	1.966E-08	0.0018	4.081E-11	0.0000	0.000E+00	0.0000	4.502E-06	0.4098	9.092E-08	0.0083	2.699E-08	0.0025	4.721E-09	0.0004
Total	3.871E-06	0.3524	1.668E-09	0.0002	0.000E+00	0.0000	6.925E-06	0.6304	1.028E-07	0.0094	3.477E-08	0.0032	4.988E-08	0.0045

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-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	5.898E-07	0.0537
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	5.751E-06	0.5235
Sr-90	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	4.645E-06	0.4228
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	1.099E-05	1.0000

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

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-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Cs-137	5.768E-04	3.858E+01	3.373E+00	1.102E+00	3.035E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.336E+01
Pb-210	7.385E-04	1.242E+01	4.295E-02	2.079E-02	3.885E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.287E+01
Ra-226	1.200E-03	8.027E+01	2.340E-01	2.865E-01	6.314E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.142E+01
Sr-90	2.625E-03	1.317E+03	2.660E+01	7.897E+00	1.381E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.353E+03

* 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	Radionuclides							
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

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 Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.362E-07	0.0379	1.397E-12	0.0000	3.121E-08	0.0035	2.729E-09	0.0003	8.911E-10	0.0001	2.455E-10	0.0000
Pb-210	1.195E-09	0.0001	8.043E-10	0.0001	1.512E-06	0.1706	5.221E-09	0.0006	2.530E-09	0.0003	4.737E-08	0.0053
Ra-226	3.135E-06	0.3536	9.762E-10	0.0001	1.189E-06	0.1341	3.466E-09	0.0004	4.244E-09	0.0005	9.351E-09	0.0011
Sr-90	1.094E-08	0.0012	2.271E-11	0.0000	2.505E-06	0.2825	5.058E-08	0.0057	1.502E-08	0.0017	2.627E-09	0.0003
Total	3.484E-06	0.3929	1.805E-09	0.0002	5.237E-06	0.5906	6.200E-08	0.0070	2.268E-08	0.0026	5.959E-08	0.0067

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-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	3.713E-07	0.0419
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	1.569E-06	0.1770
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	4.342E-06	0.4897
Sr-90	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	2.584E-06	0.2914
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	8.867E-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+01 years

Radon	Radionuclides							
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

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-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.362E-07	0.0379	1.397E-12	0.0000	0.000E+00	0.0000	3.121E-08	0.0035	2.729E-09	0.0003	8.911E-10	0.0001	2.455E-10	0.0000
Ra-226	3.137E-06	0.3537	1.781E-09	0.0002	0.000E+00	0.0000	2.701E-06	0.3046	8.687E-09	0.0010	6.774E-09	0.0008	5.672E-08	0.0064
Sr-90	1.094E-08	0.0012	2.271E-11	0.0000	0.000E+00	0.0000	2.505E-06	0.2825	5.058E-08	0.0057	1.502E-08	0.0017	2.627E-09	0.0003
Total	3.484E-06	0.3929	1.805E-09	0.0002	0.000E+00	0.0000	5.237E-06	0.5906	6.200E-08	0.0070	2.268E-08	0.0026	5.959E-08	0.0067

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-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	3.713E-07	0.0419
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	5.912E-06	0.6667
Sr-90	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	2.584E-06	0.2914
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	8.867E-06	1.0000

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

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-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Cs-137	1.142E-04	7.636E+00	6.677E-01	2.180E-01	6.006E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.581E+00
Pb-210	9.724E-04	1.632E+01	5.620E-02	2.727E-02	5.116E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.691E+01
Ra-226	9.860E-04	6.595E+01	1.923E-01	2.354E-01	5.187E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.690E+01
Sr-90	3.372E-04	1.692E+02	3.416E+00	1.014E+00	1.774E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.738E+02

* 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	Radionuclides							
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

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-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.655E-08	0.0117	2.766E-13	0.0000	6.177E-09	0.0011	5.401E-10	0.0001	1.764E-10	0.0000	4.859E-11	0.0000
Pb-210	1.301E-09	0.0002	8.757E-10	0.0002	1.645E-06	0.2896	5.665E-09	0.0010	2.749E-09	0.0005	5.158E-08	0.0091
Ra-226	2.576E-06	0.4535	8.021E-10	0.0001	9.768E-07	0.1720	2.848E-09	0.0005	3.487E-09	0.0006	7.683E-09	0.0014
Sr-90	1.405E-09	0.0002	2.916E-12	0.0000	3.217E-07	0.0566	6.496E-09	0.0011	1.929E-09	0.0003	3.373E-10	0.0001
Total	2.645E-06	0.4657	1.681E-09	0.0003	2.949E-06	0.5193	1.555E-08	0.0027	8.341E-09	0.0015	5.964E-08	0.0105

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-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	7.349E-08	0.0129
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	1.707E-06	0.3005
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	3.568E-06	0.6281
Sr-90	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	3.319E-07	0.0584
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	5.680E-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

Radon	Radionuclides							
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

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-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.655E-08	0.0117	2.766E-13	0.0000	0.000E+00	0.0000	6.177E-09	0.0011	5.401E-10	0.0001	1.764E-10	0.0000	4.859E-11	0.0000
Ra-226	2.577E-06	0.4538	1.678E-09	0.0003	0.000E+00	0.0000	2.622E-06	0.4615	8.512E-09	0.0015	6.236E-09	0.0011	5.926E-08	0.0104
Sr-90	1.405E-09	0.0002	2.916E-12	0.0000	0.000E+00	0.0000	3.217E-07	0.0566	6.496E-09	0.0011	1.929E-09	0.0003	3.373E-10	0.0001
Total	2.645E-06	0.4657	1.681E-09	0.0003	0.000E+00	0.0000	2.949E-06	0.5193	1.555E-08	0.0027	8.341E-09	0.0015	5.964E-08	0.0105

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-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	7.349E-08	0.0129
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	5.275E-06	0.9286
Sr-90	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	3.319E-07	0.0584
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	5.680E-06	1.0000

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

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-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Cs-137	1.116E-06	7.461E-02	6.525E-03	2.131E-03	5.869E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.386E-02
Pb-210	5.839E-04	9.795E+00	3.372E-02	1.637E-02	3.072E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.015E+01
Ra-226	5.625E-04	3.762E+01	1.097E-01	1.343E-01	2.959E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.816E+01
Sr-90	9.577E-07	4.805E-01	9.703E-03	2.880E-03	5.038E-04	2.231E-01	1.132E-04	1.784E-02	1.854E-03	1.012E-03	7.374E-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	Radionuclides							
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

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-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.503E-10	0.0002	2.703E-15	0.0000	6.036E-11	0.0000	5.278E-12	0.0000	1.724E-12	0.0000	4.748E-13	0.0000
Pb-210	7.677E-10	0.0003	5.167E-10	0.0002	9.703E-07	0.3187	3.341E-09	0.0011	1.622E-09	0.0005	3.043E-08	0.0100
Ra-226	1.469E-06	0.4827	4.575E-10	0.0002	5.572E-07	0.1830	1.624E-09	0.0005	1.989E-09	0.0007	4.382E-09	0.0014
Sr-90	3.991E-12	0.0000	8.282E-15	0.0000	9.137E-10	0.0003	1.845E-11	0.0000	5.478E-12	0.0000	9.581E-13	0.0000
Total	1.471E-06	0.4832	9.742E-10	0.0003	1.528E-06	0.5021	4.989E-09	0.0016	3.618E-09	0.0012	3.481E-08	0.0114

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-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	7.181E-10	0.0002
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	1.007E-06	0.3308
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	2.035E-06	0.6685
Sr-90	3.828E-10	0.0001	2.501E-13	0.0000	3.943E-11	0.0000	4.097E-12	0.0000	2.236E-12	0.0000	1.371E-09	0.0005
Total	3.828E-10	0.0001	2.501E-13	0.0000	3.943E-11	0.0000	4.097E-12	0.0000	2.236E-12	0.0000	3.044E-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

Radon	Radionuclides							
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

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-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.503E-10	0.0002	2.703E-15	0.0000	0.000E+00	0.0000	6.036E-11	0.0000	5.278E-12	0.0000	1.724E-12	0.0000	4.748E-13	0.0000
Ra-226	1.470E-06	0.4830	9.742E-10	0.0003	0.000E+00	0.0000	1.527E-06	0.5018	4.965E-09	0.0016	3.610E-09	0.0012	3.481E-08	0.0114
Sr-90	3.991E-12	0.0000	8.282E-15	0.0000	0.000E+00	0.0000	9.137E-10	0.0003	1.845E-11	0.0000	5.478E-12	0.0000	9.581E-13	0.0000
Total	1.471E-06	0.4832	9.742E-10	0.0003	0.000E+00	0.0000	1.528E-06	0.5021	4.989E-09	0.0016	3.618E-09	0.0012	3.481E-08	0.0114

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-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	7.181E-10	0.0002
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	3.042E-06	0.9993
Sr-90	3.828E-10	0.0001	2.501E-13	0.0000	0.000E+00	0.0000	3.943E-11	0.0000	4.097E-12	0.0000	2.236E-12	0.0000	1.371E-09	0.0005
Total	3.828E-10	0.0001	2.501E-13	0.0000	0.000E+00	0.0000	3.943E-11	0.0000	4.097E-12	0.0000	2.236E-12	0.0000	3.044E-06	1.0000

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

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-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Cs-137	1.029E-13	6.883E-09	6.019E-10	1.965E-10	5.414E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.736E-09
Pb-210	8.186E-05	1.373E+00	4.728E-03	2.295E-03	4.306E-02	1.619E+01	3.392E-02	1.205E+00	1.342E-02	1.100E-02	1.888E+01
Ra-226	7.884E-05	5.274E+00	1.538E-02	1.882E-02	4.148E-02	2.304E+01	1.398E-02	1.727E+00	2.382E-02	5.211E-02	3.021E+01
Sr-90	1.169E-15	5.867E-10	1.185E-11	3.517E-12	6.152E-13	3.657E-09	1.856E-12	2.926E-10	3.045E-11	1.660E-11	4.602E-09

* 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	Radionuclides							
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

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-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	5.999E-17	0.0000	2.493E-22	0.0000	5.568E-18	0.0000	4.869E-19	0.0000	1.590E-19	0.0000	4.380E-20	0.0000
Pb-210	1.076E-10	0.0000	7.243E-11	0.0000	1.360E-07	0.0631	4.684E-10	0.0002	2.273E-10	0.0001	4.266E-09	0.0020
Ra-226	2.060E-07	0.0956	6.413E-11	0.0000	7.810E-08	0.0362	2.277E-10	0.0001	2.788E-10	0.0001	6.143E-10	0.0003
Sr-90	4.873E-21	0.0000	1.011E-23	0.0000	1.116E-18	0.0000	2.253E-20	0.0000	6.689E-21	0.0000	1.170E-21	0.0000
Total	2.061E-07	0.0956	1.366E-10	0.0001	2.141E-07	0.0994	6.961E-10	0.0003	5.061E-10	0.0002	4.880E-09	0.0023

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-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	6.625E-17	0.0000
Pb-210	1.301E-06	0.6036	3.527E-09	0.0016	1.253E-07	0.0581	1.395E-09	0.0006	1.143E-09	0.0005	1.573E-06	0.7301
Ra-226	2.681E-07	0.1244	2.171E-10	0.0001	2.683E-08	0.0125	3.701E-10	0.0002	8.096E-10	0.0004	5.816E-07	0.2699
Sr-90	5.375E-18	0.0000	3.512E-21	0.0000	5.538E-19	0.0000	5.762E-20	0.0000	3.142E-20	0.0000	7.172E-18	0.0000
Total	1.569E-06	0.7280	3.744E-09	0.0017	1.521E-07	0.0706	1.765E-09	0.0008	1.953E-09	0.0009	2.155E-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

Radon	Radionuclides							
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

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-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	5.999E-17	0.0000	2.493E-22	0.0000	0.000E+00	0.0000	5.568E-18	0.0000	4.869E-19	0.0000	1.590E-19	0.0000	4.380E-20	0.0000
Ra-226	2.061E-07	0.0956	1.366E-10	0.0001	0.000E+00	0.0000	2.141E-07	0.0994	6.961E-10	0.0003	5.061E-10	0.0002	4.880E-09	0.0023
Sr-90	4.873E-21	0.0000	1.011E-23	0.0000	0.000E+00	0.0000	1.116E-18	0.0000	2.253E-20	0.0000	6.689E-21	0.0000	1.170E-21	0.0000
Total	2.061E-07	0.0956	1.366E-10	0.0001	0.000E+00	0.0000	2.141E-07	0.0994	6.961E-10	0.0003	5.061E-10	0.0002	4.880E-09	0.0023

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-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	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	6.625E-17	0.0000
Ra-226	1.569E-06	0.7280	3.744E-09	0.0017	0.000E+00	0.0000	1.521E-07	0.0706	1.765E-09	0.0008	1.953E-09	0.0009	2.155E-06	1.0000
Sr-90	5.375E-18	0.0000	3.512E-21	0.0000	0.000E+00	0.0000	5.538E-19	0.0000	5.762E-20	0.0000	3.142E-20	0.0000	7.172E-18	0.0000
Total	1.569E-06	0.7280	3.744E-09	0.0017	0.000E+00	0.0000	1.521E-07	0.0706	1.765E-09	0.0008	1.953E-09	0.0009	2.155E-06	1.0000

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