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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	Sr-90+D	1.96E-08	4.82E-10	SLPF(2,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Cs-137+D	1.12E-10	1.12E-10	SLPF(1,2)
Sf-2	Sr-90+D	4.33E-10	4.25E-10	SLPF(2,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,3)
Sf-3	Sr-90+D	9.53E-11	6.88E-11	SLPF(2,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.04E-11	3.04E-11	SLPF(1,4)
Sf-3	Sr-90+D	7.40E-11	5.59E-11	SLPF(2,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,5)
Sf-3	Sr-90+D	9.53E-11	6.88E-11	SLPF(2,5)

*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
Ba-137m	2.690E-06	5.226E-01	5.226E-01	5.226E-01	5.226E-01	5.226E-01	5.226E-01	5.226E-01	5.226E-01
Cs-137	5.320E-10	5.406E-01	5.406E-01	5.406E-01	5.406E-01	5.406E-01	5.406E-01	5.406E-01	5.406E-01
Sr-90	4.820E-10	5.430E-01	5.430E-01	5.430E-01	5.430E-01	5.430E-01	5.430E-01	5.430E-01	5.430E-01
Y-90	1.910E-08	5.250E-01	5.250E-01	5.250E-01	5.250E-01	5.250E-01	5.250E-01	5.250E-01	5.250E-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	1.218E-03	4.524E+01	3.956E+00	1.292E+00	3.559E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.084E+01
Sr-90	6.701E-03	1.866E+03	3.766E+01	1.118E+01	1.957E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.917E+03

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

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	7.480E-07	0.1675	2.951E-12	0.0000	3.660E-08	0.0082	3.200E-09	0.0007	1.045E-09	0.0002	2.879E-10	0.0001
Sr-90	2.936E-08	0.0066	5.795E-11	0.0000	3.549E-06	0.7950	7.167E-08	0.0161	2.128E-08	0.0048	3.722E-09	0.0008
Total	7.774E-07	0.1741	6.090E-11	0.0000	3.586E-06	0.8032	7.487E-08	0.0168	2.232E-08	0.0050	4.010E-09	0.0009

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	7.892E-07	0.1768
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	3.675E-06	0.8232
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	4.465E-06	1.0000

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

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	7.480E-07	0.1675	2.951E-12	0.0000	0.000E+00	0.0000	3.660E-08	0.0082	3.200E-09	0.0007	1.045E-09	0.0002	2.879E-10	0.0001
Sr-90	2.936E-08	0.0066	5.795E-11	0.0000	0.000E+00	0.0000	3.549E-06	0.7950	7.167E-08	0.0161	2.128E-08	0.0048	3.722E-09	0.0008
Total	7.774E-07	0.1741	6.090E-11	0.0000	0.000E+00	0.0000	3.586E-06	0.8032	7.487E-08	0.0168	2.232E-08	0.0050	4.010E-09	0.0009

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	7.892E-07	0.1768
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	3.675E-06	0.8232
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	4.465E-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+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	1.190E-03	4.421E+01	3.866E+00	1.262E+00	3.477E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.968E+01
Sr-90	6.507E-03	1.813E+03	3.661E+01	1.087E+01	1.901E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.862E+03

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

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	7.309E-07	0.1684	2.884E-12	0.0000	3.576E-08	0.0082	3.127E-09	0.0007	1.021E-09	0.0002	2.813E-10	0.0001
Sr-90	2.851E-08	0.0066	5.628E-11	0.0000	3.447E-06	0.7941	6.961E-08	0.0160	2.067E-08	0.0048	3.615E-09	0.0008
Total	7.594E-07	0.1750	5.916E-11	0.0000	3.483E-06	0.8024	7.274E-08	0.0168	2.169E-08	0.0050	3.896E-09	0.0009

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	7.711E-07	0.1777
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	3.569E-06	0.8223
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	4.341E-06	1.0000

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

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	7.309E-07	0.1684	2.884E-12	0.0000	0.000E+00	0.0000	3.576E-08	0.0082	3.127E-09	0.0007	1.021E-09	0.0002	2.813E-10	0.0001
Sr-90	2.851E-08	0.0066	5.628E-11	0.0000	0.000E+00	0.0000	3.447E-06	0.7941	6.961E-08	0.0160	2.067E-08	0.0048	3.615E-09	0.0008
Total	7.594E-07	0.1750	5.916E-11	0.0000	0.000E+00	0.0000	3.483E-06	0.8024	7.274E-08	0.0168	2.169E-08	0.0050	3.896E-09	0.0009

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	7.711E-07	0.1777
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	3.569E-06	0.8223
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	4.341E-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+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	1.137E-03	4.221E+01	3.691E+00	1.205E+00	3.320E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.743E+01
Sr-90	6.137E-03	1.709E+03	3.452E+01	1.025E+01	1.793E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.756E+03

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

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	6.979E-07	0.1701	2.753E-12	0.0000	3.414E-08	0.0083	2.986E-09	0.0007	9.749E-10	0.0002	2.686E-10	0.0001
Sr-90	2.689E-08	0.0066	5.307E-11	0.0000	3.251E-06	0.7924	6.565E-08	0.0160	1.949E-08	0.0048	3.409E-09	0.0008
Total	7.248E-07	0.1767	5.582E-11	0.0000	3.285E-06	0.8007	6.863E-08	0.0167	2.046E-08	0.0050	3.677E-09	0.0009

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	7.363E-07	0.1795
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	3.366E-06	0.8205
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	4.102E-06	1.0000

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

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	6.979E-07	0.1701	2.753E-12	0.0000	0.000E+00	0.0000	3.414E-08	0.0083	2.986E-09	0.0007	9.749E-10	0.0002	2.686E-10	0.0001
Sr-90	2.689E-08	0.0066	5.307E-11	0.0000	0.000E+00	0.0000	3.251E-06	0.7924	6.565E-08	0.0160	1.949E-08	0.0048	3.409E-09	0.0008
Total	7.248E-07	0.1767	5.582E-11	0.0000	0.000E+00	0.0000	3.285E-06	0.8007	6.863E-08	0.0167	2.046E-08	0.0050	3.677E-09	0.0009

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	7.363E-07	0.1795
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	3.366E-06	0.8205
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	4.102E-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+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	9.666E-04	3.589E+01	3.139E+00	1.025E+00	2.824E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.034E+01
Sr-90	4.998E-03	1.392E+03	2.812E+01	8.347E+00	1.460E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.430E+03

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

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	5.935E-07	0.1762	2.342E-12	0.0000	2.904E-08	0.0086	2.539E-09	0.0008	8.291E-10	0.0002	2.284E-10	0.0001
Sr-90	2.190E-08	0.0065	4.322E-11	0.0000	2.647E-06	0.7861	5.347E-08	0.0159	1.587E-08	0.0047	2.776E-09	0.0008
Total	6.154E-07	0.1827	4.556E-11	0.0000	2.677E-06	0.7948	5.601E-08	0.0166	1.670E-08	0.0050	3.005E-09	0.0009

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	6.261E-07	0.1859
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	2.742E-06	0.8141
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	3.368E-06	1.0000

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

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	5.935E-07	0.1762	2.342E-12	0.0000	0.000E+00	0.0000	2.904E-08	0.0086	2.539E-09	0.0008	8.291E-10	0.0002	2.284E-10	0.0001
Sr-90	2.190E-08	0.0065	4.322E-11	0.0000	0.000E+00	0.0000	2.647E-06	0.7861	5.347E-08	0.0159	1.587E-08	0.0047	2.776E-09	0.0008
Total	6.154E-07	0.1827	4.556E-11	0.0000	0.000E+00	0.0000	2.677E-06	0.7948	5.601E-08	0.0166	1.670E-08	0.0050	3.005E-09	0.0009

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	6.261E-07	0.1859
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	2.742E-06	0.8141
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	3.368E-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+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	6.085E-04	2.260E+01	1.976E+00	6.452E-01	1.777E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.539E+01
Sr-90	2.781E-03	7.745E+02	1.564E+01	4.643E+00	8.122E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.956E+02

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

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	3.736E-07	0.1947	1.474E-12	0.0000	1.828E-08	0.0095	1.598E-09	0.0008	5.219E-10	0.0003	1.438E-10	0.0001
Sr-90	1.218E-08	0.0063	2.405E-11	0.0000	1.473E-06	0.7674	2.974E-08	0.0155	8.830E-09	0.0046	1.545E-09	0.0008
Total	3.858E-07	0.2010	2.552E-11	0.0000	1.491E-06	0.7769	3.134E-08	0.0163	9.352E-09	0.0049	1.688E-09	0.0009

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	3.942E-07	0.2054
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	1.525E-06	0.7946
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	1.919E-06	1.0000

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

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	3.736E-07	0.1947	1.474E-12	0.0000	0.000E+00	0.0000	1.828E-08	0.0095	1.598E-09	0.0008	5.219E-10	0.0003	1.438E-10	0.0001
Sr-90	1.218E-08	0.0063	2.405E-11	0.0000	0.000E+00	0.0000	1.473E-06	0.7674	2.974E-08	0.0155	8.830E-09	0.0046	1.545E-09	0.0008
Total	3.858E-07	0.2010	2.552E-11	0.0000	0.000E+00	0.0000	1.491E-06	0.7769	3.134E-08	0.0163	9.352E-09	0.0049	1.688E-09	0.0009

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	3.942E-07	0.2054
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	1.525E-06	0.7946
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	1.919E-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	1.204E-04	4.472E+00	3.911E-01	1.277E-01	3.518E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.026E+00
Sr-90	3.571E-04	9.947E+01	2.009E+00	5.964E-01	1.043E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.022E+02

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

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	7.395E-08	0.2700	2.918E-13	0.0000	3.618E-09	0.0132	3.164E-10	0.0012	1.033E-10	0.0004	2.846E-11	0.0001
Sr-90	1.565E-09	0.0057	3.088E-12	0.0000	1.892E-07	0.6906	3.820E-09	0.0139	1.134E-09	0.0041	1.984E-10	0.0007
Total	7.551E-08	0.2757	3.380E-12	0.0000	1.928E-07	0.7038	4.137E-09	0.0151	1.237E-09	0.0045	2.268E-10	0.0008

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	7.801E-08	0.2848
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	1.959E-07	0.7152
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	2.739E-07	1.0000

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

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	7.395E-08	0.2700	2.918E-13	0.0000	0.000E+00	0.0000	3.618E-09	0.0132	3.164E-10	0.0012	1.033E-10	0.0004	2.846E-11	0.0001
Sr-90	1.565E-09	0.0057	3.088E-12	0.0000	0.000E+00	0.0000	1.892E-07	0.6906	3.820E-09	0.0139	1.134E-09	0.0041	1.984E-10	0.0007
Total	7.551E-08	0.2757	3.380E-12	0.0000	0.000E+00	0.0000	1.928E-07	0.7038	4.137E-09	0.0151	1.237E-09	0.0045	2.268E-10	0.0008

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	7.801E-08	0.2848
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	1.959E-07	0.7152
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	2.739E-07	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	1.177E-06	4.370E-02	3.822E-03	1.248E-03	3.438E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.912E-02
Sr-90	1.014E-06	2.825E-01	5.706E-03	1.694E-03	2.963E-04	1.312E-01	6.655E-05	5.436E-03	5.648E-04	3.083E-04	4.278E-01

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

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	7.226E-10	0.4638	2.851E-15	0.0000	3.535E-11	0.0227	3.092E-12	0.0020	1.009E-12	0.0006	2.781E-13	0.0002
Sr-90	4.444E-12	0.0029	8.772E-15	0.0000	5.373E-10	0.3449	1.085E-11	0.0070	3.221E-12	0.0021	5.634E-13	0.0004
Total	7.271E-10	0.4667	1.162E-14	0.0000	5.726E-10	0.3676	1.394E-11	0.0089	4.231E-12	0.0027	8.415E-13	0.0005

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	7.624E-10	0.4893
Sr-90	2.251E-10	0.1445	1.471E-13	0.0001	1.201E-11	0.0077	1.248E-12	0.0008	6.813E-13	0.0004	7.956E-10	0.5107
Total	2.251E-10	0.1445	1.471E-13	0.0001	1.201E-11	0.0077	1.248E-12	0.0008	6.813E-13	0.0004	1.558E-09	1.0000

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

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	7.226E-10	0.4638	2.851E-15	0.0000	0.000E+00	0.0000	3.535E-11	0.0227	3.092E-12	0.0020	1.009E-12	0.0006	2.781E-13	0.0002
Sr-90	4.444E-12	0.0029	8.772E-15	0.0000	0.000E+00	0.0000	5.373E-10	0.3449	1.085E-11	0.0070	3.221E-12	0.0021	5.634E-13	0.0004
Total	7.271E-10	0.4667	1.162E-14	0.0000	0.000E+00	0.0000	5.726E-10	0.3676	1.394E-11	0.0089	4.231E-12	0.0027	8.415E-13	0.0005

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	7.624E-10	0.4893
Sr-90	2.251E-10	0.1445	1.471E-13	0.0001	0.000E+00	0.0000	1.201E-11	0.0077	1.248E-12	0.0008	6.813E-13	0.0004	7.956E-10	0.5107
Total	2.251E-10	0.1445	1.471E-13	0.0001	0.000E+00	0.0000	1.201E-11	0.0077	1.248E-12	0.0008	6.813E-13	0.0004	1.558E-09	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	1.086E-13	4.031E-09	3.525E-10	1.151E-10	3.171E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.531E-09
Sr-90	1.238E-15	3.450E-10	6.967E-12	2.068E-12	3.618E-13	2.151E-09	1.091E-12	8.915E-11	9.277E-12	5.058E-12	2.610E-09

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

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	6.666E-17	0.8964	2.630E-22	0.0000	3.261E-18	0.0439	2.852E-19	0.0038	9.312E-20	0.0013	2.565E-20	0.0003
Sr-90	5.426E-21	0.0001	1.071E-23	0.0000	6.560E-19	0.0088	1.325E-20	0.0002	3.933E-21	0.0001	6.880E-22	0.0000
Total	6.666E-17	0.8965	2.737E-22	0.0000	3.917E-18	0.0527	2.984E-19	0.0040	9.705E-20	0.0013	2.634E-20	0.0004

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	7.032E-17	0.9457
Sr-90	3.161E-18	0.0425	2.065E-21	0.0000	1.687E-19	0.0023	1.756E-20	0.0002	9.572E-21	0.0001	4.038E-18	0.0543
Total	3.161E-18	0.0425	2.065E-21	0.0000	1.687E-19	0.0023	1.756E-20	0.0002	9.572E-21	0.0001	7.436E-17	1.0000

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

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	6.666E-17	0.8964	2.630E-22	0.0000	0.000E+00	0.0000	3.261E-18	0.0439	2.852E-19	0.0038	9.312E-20	0.0013	2.565E-20	0.0003
Sr-90	5.426E-21	0.0001	1.071E-23	0.0000	0.000E+00	0.0000	6.560E-19	0.0088	1.325E-20	0.0002	3.933E-21	0.0001	6.880E-22	0.0000
Total	6.666E-17	0.8965	2.737E-22	0.0000	0.000E+00	0.0000	3.917E-18	0.0527	2.984E-19	0.0040	9.705E-20	0.0013	2.634E-20	0.0004

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	7.032E-17	0.9457
Sr-90	3.161E-18	0.0425	2.065E-21	0.0000	0.000E+00	0.0000	1.687E-19	0.0023	1.756E-20	0.0002	9.572E-21	0.0001	4.038E-18	0.0543
Total	3.161E-18	0.0425	2.065E-21	0.0000	0.000E+00	0.0000	1.687E-19	0.0023	1.756E-20	0.0002	9.572E-21	0.0001	7.436E-17	1.0000

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