Table A.1. List of 'parent' nuclides of the source term following a major accident in a 2785 MWth (900 MWe) PWR

Parent nuclides Isotope	Group	Fraction of the core inventory	Source term Bq	Half-Life T1/2 s
I-129	2	6.00E-01	3.75E+10	4.95E+14
I-131	2	6.00E-01	1.67E+18	6.95E+05
Cs-134	3	4.00E-01	1.07E+17	6.51E+07
Cs-135	3	4.00E-01	3.62E+11	7.26E+13
Cs-136	3	4.00E-01	5.40E+16	1.13E+06
Cs-137	3	4.00E-01	8.80E+16	9.47E+08
Rb-86	3	4.00E-01	1.32E+15	1.61E+06
Sb-124	4	8.00E-02	1.12E+14	5.20E+06
Sb-125	4	8.00E-02	1.34E+15	8.74E+07
Sb-126	4	8.00E-02	1.05E+14	1.07E+06
Sb-127	4	8.00E-02	1.86E+16	3.33E+05
Te-125m	4	8.00E-02	2.69E+14	5.10E+06
Te-127m	4	8.00E-02	2.40E+15	9.42E+06
Te-129m	4	8.00E-02	1.55E+16	2.90E+06
Te-132	4	8.00E-02	3.13E+17	2.82E+05
Ba-140	5	5.00E-02	2.43E+17	1.10E+06
Sr-89	5	5.00E-02	1.40E+17	4.36E+06
Sr-90	5	5.00E-02	8.20E+15	9.19E+08
Ag-108m	6	2.00E-02	1.07E+08	4.04E+09
Ag-110m	6	2.00E-02	1.29E+14	2.16E+07
Ag-111	6	2.00E-02	2.74E+15	6.44E+05
Ru-103	6	2.00E-02	8.08E+16	3.39E+06
Ru-106	6	2.00E-02	2.24E+16	3.18E+07
Tc-99	6	2.00E-02	5.76E+11	6.72E+12
Am-241	7	3.00E-03	6.39E+11	1.36E+10
Am-243	7	3.00E-03	6.27E+10	2.33E+11
Cm-242	7	3.00E-03	1.78E+14	1.41E+07
Cm-243	7	3.00E-03	1.12E+11	8.99E+08
Cm-244	7	3.00E-03	6.06E+12	5.72E+08
Eu-152	7	3.00E-03	3.12E+10	4.21E+08
Eu-154	7	3.00E-03	4.68E+13	2.78E+08
Eu-155	7	3.00E-03	1.91E+13	1.57E+08
Eu-156	7	3.00E-03	9.75E+14	1.31E+06
Nb-93m	7	3.00E-03	5.61E+08	4.29E+08
Nb-94	7	3.00E-03	5.19E+06	6.41E+11
Nb-95	7	3.00E-03	1.44E+16	3.04E+06
Nb-95m	7	3.00E-03	3.30E+11	3.12E+05
Nd-147	7	3.00E-03	5.52E+15	9.49E+05
Pm-147	7	3.00E-03	1.34E+15	8.28E+07
Pm-148	7	3.00E-03	1.33E+15	4.64E+05
Pm-148m	7	3.00E-03	2.92E+14	3.57E+06
Pr-143	7	3.00E-03	1.31E+16	1.17E+06
Sm-147	7	3.00E-03	8.76E+03	3.35E+18
Sm-151	7	3.00E-03	2.66E+12	2.87E+09
Y-91	7	3.00E-03	1.08E+16	5.06E+06
Zr-93	7	3.00E-03	1.20E+10	4.83E+13
Zr-95	7	3.00E-03	1.43E+16	5.52E+06
Ce-141	8	3.00E-03	1.39E+16	2.81E+06
Ce-144	8	3.00E-03	9.84E+15	2.45E+07
Np-237	8	3.00E-03	1.94E+09	6.75E+13
Pu-236	8	3.00E-03	1.29E+10	9.00E+07
Pu-238	8	3.00E-03	1.23E+13	2.77E+09
Pu-239	8	3.00E-03	2.74E+12	7.59E+11
Pu-240	8	3.00E-03	3.03E+12	2.06E+11
Pu-241	8	3.00E-03	8.10E+14	4.54E+08
Pu-242	8	3.00E-03	8.25E+09	1.19E+13
U-234	8	3.00E-03	8.52E+07	7.72E+12
U-235	8	3.00E-03	2.66E+08	2.22E+16
U-238	8	3.00E-03	2.56E+09	1.41E+17
TOTAL (Bq)			**2.85E+18**	

1° Fractions are published by Jacquemain (2013, 77) and the core inventory is edited by (EDF 2004).
2° The present study doesn't care for parent rare gas.

Table A.2. List of 'parent' nuclides (of the source term) and the related 'progeny' taken into account in this study

Parent nuclides Isotope	Progeny Isotope	Progeny's T1/2 (s)	Progeny's yield
I-131	Xe-131m	1.02E+06	1.18E-02
CS-137	Ba-137m	1.53E+02	9.44E-01
SB-125	Te-125m	4.96E+06	2.31E-01
SB-127	Te-127	3.37E+04	8.23E-01
SB-127	Te-127m	9.42E+06	1.77E-01
TE-127M	Te-127	3.37E+04	9.76E-01
TE-129M	Te-129	4.18E+03	6.30E-01
TE-129M	I-129	4.96E+14	3.70E-01
TE-132	I-132	8.26E+03	1.00E+00
BA-140	La-140	1.45E+05	1.00E+00
SR-90	Y-90	2.31E+05	1.00E+00
Ag-108m	Ag-108	1.42E+02	8.70E-02
Ag-110m	Ag-110	2.46E+01	1.36E-02
RU-103	Rh-103m	3.37E+03	9.88E-01
RU-106	Rh-106	2.98E+01	1.00E+00
AM-241	Np-237	6.77E+13	1.00E+00
AM-243	Np-239	2.04E+05	1.00E+00
CM-242	Pu-238	2.77E+09	1.00E+00
CM-243	Pu-239	7.61E+11	9.98E-01
CM-243	Am-243	2.33E+11	2.40E-03
CM-244	Pu-240	2.07E+11	1.00E+00
Eu-152	Gd-152	3.41E+21	2.79E-01
NB-95M	Nb-95	3.02E+06	9.44E-01
ND-147	Pm-147	8.28E+07	1.00E+00
Pm-147	Sm-147	3.35E+18	1.00E+00
Pm-148	Sm-148	2.21E+23	1.00E+00
Pm-148m	Sm-148	2.21E+23	9.58E-01
Pm-148m	Pm-148	4.64E+05	4.20E-02
ZR-93	Nb-93m	5.09E+08	9.75E-01
ZR-95	Nb-95	3.02E+06	9.89E-01
ZR-95	Nb-95m	3.12E+05	1.08E-02
CE-144	Pr-144	1.04E+03	9.90E-01
CE-144	Pr-144m	4.32E+02	9.77E-03
NP-237	Pa-233	2.33E+06	1.00E+00
PU-236	U-232	2.18E+09	1.00E+00
PU-238	U-234	7.75E+12	1.00E+00
PU-239	U-235m	1.56E+03	9.99E-01
PU-239	U-235	2.22E+16	6.00E-04
PU-240	U-236	7.40E+14	1.00E+00
PU-241	Am-241	1.36E+10	1.00E+00
PU-241	U-237	5.83E+05	2.45E-05
PU-242	U-238	1.41E+17	1.00E+00
U-234	Th-230	2.38E+12	1.00E+00
U-235	Th-231	9.19E+04	1.00E+00
U-238	Th-234	2.08E+06	1.00E+00

Source: (EPA 2019a, Table A-1. Nuclides of ICRP Publication 107 ordered by atomic number)

EDF, SEPTEN. 2004. Étude des conséquences radiologiques « court terme » et « long terme » en accident grave pour les termes sources réévalués S'4 et S'3 - palier 900 MWe, Note d'étude ENTEAG040273, A1, p. 16/34.