

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Actinium (89)	Ac-223	1.73E+05	4.00E-06	1.36E+17	5.70E+17	2.63E+03	1.10E+04	2.06E+19	8.64E+19
Actinium (89)	Ac-224	2.18E+03	3.17E-04	3.77E+01	4.08E+02	1.23E-02	1.52E-02	3.47E+02	1.46E+03
Actinium (89)	Ac-225	2.53E+01	2.74E-02	1.07E+00	8.51E+00	4.73E-03	5.87E-03	5.97E+01	2.51E+02
Actinium (89)	Ac-226	2.07E+02	3.35E-03	6.98E+00	6.00E+01	3.10E-03	3.84E-03	5.71E+02	2.40E+03
Actinium (89)	Ac-227	3.18E-02	2.18E+01	3.71E-03	3.14E-02	5.48E-04	6.80E-04	1.09E+00	4.60E+00
Actinium (89)	Ac-228	9.87E+02	7.02E-04	2.79E+01	2.75E+02	9.23E-04	1.14E-03	2.14E+02	8.99E+02
Actinium (89)	Ac-230	1.79E+05	3.87E-06	1.37E+07	1.18E+08	3.49E-04	4.32E-04	5.18E+09	2.17E+10
Actinium (89)	Ac-231	4.86E+04	1.43E-05	2.14E+05	1.62E+06	1.38E-04	1.71E-04	9.20E+05	3.86E+06
Actinium (89)	Ac-232	1.84E+05	3.77E-06	3.94E+12	4.61E+13	4.85E-04	6.01E-04	4.57E+14	1.92E+15
Actinium (89)	Ac-233	1.51E+05	4.60E-06	1.86E+05	1.19E+06	4.22E-04	5.23E-04	1.74E+05	7.31E+05
Silver (47)	Ag-100m	1.63E+05	4.26E-06	4.32E+04	2.03E+05	1.64E+01	3.11E+01	1.10E+04	4.64E+04
Silver (47)	Ag-101	3.28E+04	2.11E-05	3.92E+04	1.82E+05	3.69E+01	6.43E+01	1.50E+04	6.31E+04
Silver (47)	Ag-102	2.82E+04	2.45E-05	3.25E+12	1.37E+13	5.43E+01	2.14E+02	7.11E+11	2.99E+12
Silver (47)	Ag-102m	4.73E+04	1.46E-05	4.51E+12	1.90E+13	5.02E+01	2.05E+02	9.98E+11	4.19E+12
Silver (47)	Ag-103	5.54E+03	1.25E-04	5.27E+03	2.37E+04	6.07E+01	9.19E+01	1.63E+03	6.86E+03
Silver (47)	Ag-104	5.26E+03	1.32E-04	1.83E+03	7.71E+03	6.70E+01	2.41E+02	3.03E+02	1.27E+03
Silver (47)	Ag-104m	1.09E+04	6.37E-05	5.47E+03	2.32E+04	9.71E+01	3.43E+02	2.22E+03	9.33E+03
Silver (47)	Ag-105	6.13E+00	1.13E-01	7.70E+00	3.79E+01	4.21E+01	5.63E+01	2.84E+00	1.19E+01
Silver (47)	Ag-105m	5.04E+04	1.38E-05	6.35E+04	3.12E+05	4.22E+01	5.64E+01	2.34E+04	9.83E+04
Silver (47)	Ag-106	1.52E+04	4.56E-05	8.95E+09	3.80E+10	2.55E+02	8.54E+02	1.04E+10	4.39E+10
Silver (47)	Ag-106m	3.05E+01	2.27E-02	8.13E+00	3.76E+01	2.26E+01	3.64E+01	1.39E+00	5.83E+00
Silver (47)	Ag-108	1.54E+05	4.51E-06	1.16E+19	4.89E+19	7.03E+03	2.95E+04	1.50E+20	6.31E+20
Silver (47)	Ag-108m	1.66E-03	4.18E+02	3.29E-01	1.70E+00	1.07E+00	1.34E+00	1.00E-01	4.20E-01
Silver (47)	Ag-109m	5.52E+05	1.26E-06	1.41E+23	5.91E+23	5.65E+04	2.37E+05	1.66E+23	6.98E+23
Silver (47)	Ag-110	8.88E+05	7.80E-07	1.19E+23	5.00E+23	3.63E+03	1.52E+04	1.57E+24	6.60E+24
Silver (47)	Ag-110m	1.01E+00	6.84E-01	3.55E-01	1.76E+00	3.02E+00	3.87E+00	1.08E-01	4.53E-01
Silver (47)	Ag-111	3.40E+01	2.04E-02	4.12E+01	3.15E+02	2.24E+01	2.78E+01	3.81E+03	1.60E+04
Silver (47)	Ag-111m	3.37E+05	2.05E-06	4.12E+05	3.16E+06	2.26E+01	2.80E+01	3.81E+07	1.60E+08
Silver (47)	Ag-112	1.94E+03	3.57E-04	1.73E+03	8.16E+03	1.16E+02	2.09E+02	1.94E+03	8.16E+03
Silver (47)	Ag-113	1.13E+03	6.13E-04	2.65E+03	1.54E+04	3.52E-01	4.36E-01	1.92E+04	8.07E+04
Silver (47)	Ag-113m	3.18E+05	2.18E-06	1.16E+06	6.76E+06	3.52E-01	4.36E-01	8.42E+06	3.54E+07
Silver (47)	Ag-114	4.75E+06	1.46E-07	2.30E+27	9.65E+27	6.12E+02	2.57E+03	4.73E+27	1.99E+28

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Silver (47)	Ag-115	1.82E+04	3.81E-05	1.36E+04	8.66E+04	1.11E-01	1.38E-01	4.56E+04	1.91E+05
Silver (47)	Ag-116	1.36E+05	5.10E-06	9.53E+16	4.00E+17	8.35E+01	3.51E+02	3.31E+16	1.39E+17
Silver (47)	Ag-117	2.97E+05	2.33E-06	1.42E+05	6.31E+05	4.31E+01	1.05E+02	5.99E+04	2.52E+05
Silver (47)	Ag-99	1.76E+05	3.93E-06	2.43E+05	1.05E+06	4.07E+01	1.35E+02	7.81E+04	3.28E+05
Aluminum (13)	Al-26	9.67E-07	7.17E+05	2.08E-01	1.09E+00	3.81E-01	4.73E-01	2.24E-01	9.43E-01
Aluminum (13)	Al-28	1.63E+05	4.26E-06	8.08E+17	3.39E+18	1.01E+02	4.22E+02	5.16E+17	2.17E+18
Aluminum (13)	Al-29	5.55E+04	1.25E-05	5.08E+14	2.13E+15	1.33E+02	5.59E+02	3.17E+14	1.33E+15
Americium (95)	Am-237	4.99E+03	1.39E-04	9.91E+03	4.48E+04	3.76E-04	4.66E-04	2.19E+03	9.19E+03
Americium (95)	Am-238	3.72E+03	1.86E-04	1.99E+03	1.03E+04	1.78E-04	2.20E-04	7.53E+02	3.16E+03
Americium (95)	Am-239	5.10E+02	1.36E-03	1.33E+03	6.83E+03	9.77E-05	1.21E-04	2.98E+02	1.25E+03
Americium (95)	Am-240	1.20E+02	5.80E-03	8.38E+01	3.95E+02	1.98E-04	2.45E-04	1.89E+01	7.92E+01
Americium (95)	Am-241	1.60E-03	4.32E+02	9.50E-03	6.55E-02	2.04E-04	2.52E-04	1.67E+01	7.00E+01
Americium (95)	Am-242	3.79E+02	1.83E-03	6.20E+01	5.81E+02	1.72E-04	2.14E-04	1.69E+04	7.09E+04
Americium (95)	Am-242m	4.91E-03	1.41E+02	9.27E-03	6.36E-02	1.26E-04	1.56E-04	3.31E+01	1.39E+02
Americium (95)	Am-243	9.40E-05	7.37E+03	9.51E-03	6.53E-02	8.02E-05	9.93E-05	1.00E+00	4.21E+00
Americium (95)	Am-244	6.01E+02	1.15E-03	1.66E+02	1.03E+03	1.86E-04	2.30E-04	1.35E+02	5.65E+02
Americium (95)	Am-244m	1.40E+04	4.95E-05	5.58E+03	4.05E+04	1.86E-04	2.30E-04	1.95E+09	8.20E+09
Americium (95)	Am-245	2.96E+03	2.34E-04	3.22E+04	1.76E+05	1.38E-04	1.71E-04	8.73E+04	3.67E+05
Americium (95)	Am-246	9.34E+03	7.42E-05	1.07E+04	4.64E+04	1.22E-04	1.51E-04	1.53E+03	6.43E+03
Americium (95)	Am-246m	1.46E+04	4.76E-05	9.38E+05	6.46E+06	1.22E-04	1.51E-04	1.30E+09	5.45E+09
Americium (95)	Am-247	1.58E+04	4.38E-05	1.09E+09	7.42E+09	6.86E-05	8.50E-05	2.96E+10	1.24E+11
Argon (18)	Ar-37	7.22E+00	9.60E-02						
Argon (18)	Ar-39	2.58E-03	2.69E+02	3.94E+02	1.65E+03	7.77E+04	3.26E+05		
Argon (18)	Ar-41	3.32E+03	2.09E-04	2.43E+03	1.02E+04	1.45E+02	6.10E+02	1.54E+03	6.48E+03
Argon (18)	Ar-42	2.11E-02	3.29E+01	1.42E+00	7.20E+00	9.06E+01	1.26E+02		
Argon (18)	Ar-43	6.78E+04	1.02E-05	5.68E+04	2.52E+05	4.31E+01	8.96E+01	2.01E+04	8.44E+04
Argon (18)	Ar-44	3.07E+04	2.26E-05	1.04E+10	4.42E+10	4.03E+01	1.55E+02	4.42E+09	1.86E+10
Arsenic (33)	As-68	1.44E+05	4.81E-06	1.23E+05	6.43E+05	1.26E+00	1.60E+00	9.53E+05	4.00E+06
Arsenic (33)	As-69	2.39E+04	2.90E-05	2.12E+04	9.31E+04	5.53E+01	1.18E+02	9.58E+03	4.02E+04
Arsenic (33)	As-70	6.92E+03	1.00E-04	1.50E+03	6.36E+03	4.10E+01	1.44E+02	3.01E+02	1.26E+03
Arsenic (33)	As-71	9.30E+01	7.45E-03	1.06E+02	5.16E+02	7.55E+01	1.10E+02	4.12E+01	1.73E+02
Arsenic (33)	As-72	2.33E+02	2.97E-03	7.56E+01	3.77E+02	2.83E+01	4.30E+01	6.45E+01	2.71E+02

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Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Arsenic (33)	As-73	3.15E+00	2.20E-01	2.04E+01	1.59E+02	2.87E+01	3.56E+01	1.31E+02	5.52E+02
Arsenic (33)	As-74	1.42E+01	4.87E-02	9.01E+00	4.83E+01	1.48E+01	1.91E+01	9.13E+00	3.83E+01
Arsenic (33)	As-76	2.35E+02	2.95E-03	1.56E+02	9.17E+02	4.32E+01	5.75E+01	4.23E+02	1.78E+03
Arsenic (33)	As-77	1.56E+02	4.43E-03	6.30E+02	4.72E+03	8.99E+01	1.12E+02	1.75E+05	7.34E+05
Arsenic (33)	As-78	4.02E+03	1.73E-04	2.50E+03	1.09E+04	1.05E+02	2.73E+02	1.24E+03	5.22E+03
Arsenic (33)	As-79	4.04E+04	1.71E-05	8.31E+09	8.40E+10	6.43E+00	7.97E+00	9.64E+15	4.05E+16
Astatine (85)	At-204	3.96E+04	1.75E-05	8.26E+03	3.62E+04	1.90E+01	4.25E+01	9.55E+02	4.01E+03
Astatine (85)	At-205	1.39E+04	4.98E-05	3.64E+03	1.62E+04	1.16E+01	1.76E+01	7.12E+02	2.99E+03
Astatine (85)	At-206	1.19E+04	5.82E-05	7.44E+02	4.88E+03	5.64E-01	7.08E-01	2.61E+02	1.10E+03
Astatine (85)	At-207	3.37E+03	2.05E-04	8.85E+02	3.83E+03	1.07E+00	1.35E+00	1.38E+02	5.81E+02
Astatine (85)	At-208	3.72E+03	1.86E-04	1.79E+01	1.50E+02	5.91E-03	7.32E-03	1.08E+02	4.55E+02
Astatine (85)	At-209	1.12E+03	6.18E-04	1.25E+02	8.28E+02	4.46E-03	5.52E-03	4.40E+01	1.85E+02
Astatine (85)	At-210	7.49E+02	9.25E-04	1.15E+00	9.78E+00	9.31E-03	1.15E-02	2.80E+01	1.17E+02
Astatine (85)	At-211	8.42E+02	8.24E-04	1.27E+02	1.01E+03	2.96E-01	3.67E-01	5.82E+03	2.45E+04
Astatine (85)	At-215	2.19E+11	3.17E-12	3.00E+23	1.26E+24	3.52E+03	1.48E+04	3.51E+25	1.47E+26
Astatine (85)	At-216	7.28E+10	9.51E-12	1.88E+12	8.28E+12	2.59E+00	3.25E+00	6.04E+11	2.54E+12
Astatine (85)	At-217	6.77E+08	1.02E-09	1.92E+10	1.37E+11	1.23E+00	1.52E+00	4.63E+11	1.94E+12
Astatine (85)	At-218	1.46E+07	4.76E-08	4.09E+05	3.51E+06	4.01E-03	4.97E-03		
Astatine (85)	At-219	3.90E+05	1.78E-06			3.29E+00	4.09E+00		
Astatine (85)	At-220	9.82E+04	7.06E-06	1.57E+04	1.18E+05	3.57E-01	4.43E-01	1.95E+04	8.18E+04
Gold (79)	Au-186	3.40E+04	2.04E-05	1.28E+04	5.59E+04	9.67E-03	1.20E-02	2.21E+03	9.26E+03
Gold (79)	Au-187	4.34E+04	1.60E-05	3.92E+04	1.73E+05	7.10E+01	1.78E+02	6.45E+03	2.71E+04
Gold (79)	Au-190	8.51E+03	8.14E-05	3.56E+03	1.50E+04	4.32E-03	5.36E-03	5.59E+02	2.35E+03
Gold (79)	Au-191	1.91E+03	3.63E-04	1.62E+03	7.55E+03	6.43E+01	9.82E+01	3.11E+02	1.31E+03
Gold (79)	Au-192	1.23E+03	5.64E-04	6.04E+02	2.59E+03	7.67E+01	2.17E+02	1.03E+02	4.32E+02
Gold (79)	Au-193	3.44E+02	2.01E-03	1.42E+03	6.96E+03	4.95E+01	6.29E+01	4.14E+02	1.74E+03
Gold (79)	Au-193m	5.60E+06	1.24E-07	2.31E+07	1.13E+08	4.73E+01	6.20E+01	6.75E+06	2.83E+07
Gold (79)	Au-194	1.60E+02	4.34E-03	1.24E+02	5.65E+02	8.49E+01	1.55E+02	2.83E+01	1.19E+02
Gold (79)	Au-195	1.36E+00	5.10E-01	7.79E+00	4.77E+01	2.17E+01	2.70E+01	4.83E+00	2.03E+01
Gold (79)	Au-195m	7.17E+05	9.67E-07	4.11E+06	2.52E+07	2.12E+01	2.68E+01	2.55E+06	1.07E+07
Gold (79)	Au-196	4.09E+01	1.69E-02	5.87E+01	2.83E+02	9.21E+01	1.34E+02	1.64E+01	6.90E+01
Gold (79)	Au-196m	6.32E+02	1.10E-03	5.39E+02	2.73E+03	4.27E+01	5.89E+01	1.43E+02	6.02E+02

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Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Gold (79)	Au-198	9.39E+01	7.38E-03	8.78E+01	5.07E+02	4.07E+01	5.35E+01	1.22E+02	5.11E+02
Gold (79)	Au-198m	1.11E+02	6.22E-03	4.80E+01	2.76E+02	1.35E+01	1.75E+01	1.77E+01	7.45E+01
Gold (79)	Au-199	8.06E+01	8.60E-03	2.20E+02	1.42E+03	4.75E+01	5.97E+01	3.98E+02	1.67E+03
Gold (79)	Au-200	7.53E+03	9.21E-05	1.80E+04	7.92E+04	4.10E+02	8.92E+02	3.14E+04	1.32E+05
Gold (79)	Au-200m	3.25E+02	2.13E-03	1.17E+02	5.46E+02	3.50E+01	5.79E+01	1.69E+01	7.09E+01
Gold (79)	Au-201	1.40E+04	4.95E-05	2.09E+10	9.45E+10	1.50E+03	2.36E+03	7.58E+10	3.18E+11
Gold (79)	Au-202	7.59E+05	9.13E-07	4.82E+22	2.02E+23	1.00E+03	4.21E+03	1.23E+23	5.17E+23
Barium (56)	Ba-124	3.31E+04	2.09E-05	2.32E+13	9.84E+13	1.05E+02	3.82E+02	1.60E+13	6.70E+13
Barium (56)	Ba-126	3.64E+03	1.90E-04	1.71E+03	7.41E+03	8.45E+01	2.20E+02	8.99E+02	3.78E+03
Barium (56)	Ba-127	2.87E+04	2.42E-05	3.79E+04	1.60E+05	1.19E+02	3.59E+02	1.00E+04	4.21E+04
Barium (56)	Ba-128	1.04E+02	6.66E-03	3.85E+01	2.20E+02	2.35E+01	3.16E+01	8.03E+01	3.37E+02
Barium (56)	Ba-129	2.72E+03	2.55E-04	3.81E+03	1.66E+04	1.72E+02	3.28E+02	1.48E+03	6.24E+03
Barium (56)	Ba-129m	2.81E+03	2.47E-04	1.40E+03	5.96E+03	7.85E+01	2.01E+02	2.35E+02	9.89E+02
Barium (56)	Ba-131	2.20E+01	3.15E-02	2.68E+01	1.35E+02	3.94E+01	5.21E+01	9.11E+00	3.83E+01
Barium (56)	Ba-131m	2.49E+04	2.78E-05	3.04E+04	1.53E+05	3.86E+01	5.14E+01	1.03E+04	4.34E+04
Barium (56)	Ba-133	6.59E-02	1.05E+01	6.90E-01	4.81E+00	3.87E+00	4.82E+00	4.37E-01	1.84E+00
Barium (56)	Ba-133m	1.56E+02	4.44E-03	3.24E+02	2.19E+03	3.69E+00	4.59E+00	5.44E+02	2.29E+03
Barium (56)	Ba-135m	2.12E+02	3.28E-03	6.81E+02	4.51E+03	1.02E+02	1.29E+02	2.13E+03	8.96E+03
Barium (56)	Ba-137m	1.43E+05	4.86E-06	4.20E+17	1.76E+18	3.32E+02	1.39E+03	2.68E+17	1.12E+18
Barium (56)	Ba-139	4.39E+03	1.58E-04	1.83E+04	8.97E+04	5.25E+02	7.32E+02	3.93E+04	1.65E+05
Barium (56)	Ba-140	1.98E+01	3.49E-02	3.67E+00	2.04E+01	5.16E+00	6.72E+00	2.29E+00	9.60E+00
Barium (56)	Ba-141	1.99E+04	3.48E-05	2.23E+04	1.45E+05	9.50E+00	1.22E+01	1.57E+05	6.57E+05
Barium (56)	Ba-142	3.44E+04	2.02E-05	1.36E+04	5.83E+04	4.59E+01	1.45E+02	5.90E+03	2.48E+04
Beryllium (4)	Be-10	4.59E-07	1.51E+06	1.44E+00	1.16E+01	1.19E+00	1.48E+00		
Beryllium (4)	Be-7	4.75E+00	1.46E-01	6.97E+01	3.24E+02	5.83E+02	8.05E+02	5.40E+02	2.27E+03
Bismuth (83)	Bi-197	3.92E+04	1.77E-05	3.12E+04	1.40E+05	7.32E+00	1.01E+01	5.70E+03	2.39E+04
Bismuth (83)	Bi-200	1.00E+04	6.93E-05	2.22E+03	9.63E+03	2.85E+01	5.88E+01	2.75E+02	1.15E+03
Bismuth (83)	Bi-201	3.37E+03	2.05E-04	1.11E+03	4.78E+03	4.10E+01	8.55E+01	2.11E+02	8.86E+02
Bismuth (83)	Bi-202	3.53E+03	1.96E-04	1.20E+03	5.07E+03	8.06E-01	1.01E+00	1.30E+02	5.48E+02
Bismuth (83)	Bi-203	5.16E+02	1.34E-03	1.63E+02	7.26E+02	3.59E+01	6.91E+01	2.78E+01	1.17E+02
Bismuth (83)	Bi-204	5.41E+02	1.28E-03	1.51E+02	6.61E+02	4.00E+01	9.12E+01	1.79E+01	7.51E+01
Bismuth (83)	Bi-205	1.65E+01	4.19E-02	7.43E+00	3.47E+01	1.74E+01	2.42E+01	1.73E+00	7.27E+00

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Bismuth (83)	Bi-206	4.05E+01	1.71E-02	8.98E+00	4.22E+01	1.51E+01	2.28E+01	1.07E+00	4.50E+00
Bismuth (83)	Bi-207	2.11E-02	3.29E+01	4.29E-01	2.09E+00	1.06E+00	1.32E+00	1.03E-01	4.32E-01
Bismuth (83)	Bi-208	1.88E-06	3.68E+05	3.21E-01	1.48E+00	1.12E+00	1.40E+00	1.09E-01	4.59E-01
Bismuth (83)	Bi-210	5.05E+01	1.37E-02	7.81E-02	6.68E-01	9.04E-03	1.12E-02	4.61E+08	1.94E+09
Bismuth (83)	Bi-210m	2.28E-07	3.04E+06	1.08E-01	8.31E-01	4.08E-03	5.05E-03	1.75E+00	7.33E+00
Bismuth (83)	Bi-211	1.70E+05	4.07E-06	2.33E+17	9.81E+17	3.53E+03	1.48E+04	2.73E+19	1.15E+20
Bismuth (83)	Bi-212	6.02E+03	1.15E-04	3.96E+03	1.75E+04	2.59E+00	3.25E+00	1.28E+03	5.39E+03
Bismuth (83)	Bi-212n	5.20E+04	1.33E-05	6.65E+15	2.79E+16	2.04E+03	8.57E+03		
Bismuth (83)	Bi-213	7.99E+03	8.67E-05	2.07E+04	1.07E+05	1.23E+00	1.52E+00	2.01E+04	8.45E+04
Bismuth (83)	Bi-214	1.83E+04	3.79E-05	5.14E+02	4.41E+03	4.01E-03	4.97E-03	2.34E+08	9.81E+08
Bismuth (83)	Bi-215	4.79E+04	1.45E-05	1.37E+05	6.95E+05	3.19E+00	3.97E+00	1.11E+06	4.67E+06
Bismuth (83)	Bi-216	1.68E+05	4.13E-06	2.69E+04	2.02E+05	3.57E-01	4.44E-01	3.33E+04	1.40E+05
Berkelium (97)	Bk-245	5.12E+01	1.35E-02	8.74E+01	5.14E+02	1.38E-04	1.71E-04	3.78E+01	1.59E+02
Berkelium (97)	Bk-246	1.41E+02	4.93E-03	1.21E+02	5.67E+02	1.22E-04	1.51E-04	2.80E+01	1.18E+02
Berkelium (97)	Bk-247	5.02E-04	1.38E+03	5.10E-03	3.81E-02	6.05E-05	7.50E-05	2.40E+00	1.01E+01
Berkelium (97)	Bk-248m	2.56E+02	2.71E-03	3.00E+01	2.83E+02	1.17E-04	1.45E-04	2.87E+03	1.21E+04
Berkelium (97)	Bk-249	7.67E-01	9.04E-01	1.85E+00	1.38E+01	8.82E-05	1.09E-04	4.85E+02	2.04E+03
Berkelium (97)	Bk-250	1.89E+03	3.67E-04	3.10E+02	2.20E+03	1.17E-04	1.44E-04	9.09E+02	3.82E+03
Berkelium (97)	Bk-251	6.55E+03	1.06E-04	2.32E+04	1.35E+05	5.34E-05	6.62E-05	1.95E+04	8.21E+04
Bromine (35)	Br-72	2.78E+05	2.49E-06	4.12E+04	2.75E+05	6.82E+00	9.61E+00	7.45E+04	3.13E+05
Bromine (35)	Br-73	1.07E+05	6.47E-06	7.45E+04	3.42E+05	1.92E+01	2.86E+01	2.53E+04	1.06E+05
Bromine (35)	Br-74	1.43E+04	4.83E-05	6.24E+08	2.63E+09	3.73E+01	1.43E+02	1.74E+08	7.31E+08
Bromine (35)	Br-74m	7.92E+03	8.75E-05	1.80E+03	7.63E+03	4.13E+01	1.47E+02	4.16E+02	1.75E+03
Bromine (35)	Br-75	3.77E+03	1.84E-04	1.24E+03	6.50E+03	2.33E+01	3.32E+01	6.40E+02	2.69E+03
Bromine (35)	Br-76	3.75E+02	1.85E-03	1.19E+02	5.18E+02	3.75E+01	7.70E+01	3.47E+01	1.46E+02
Bromine (35)	Br-76m	1.67E+07	4.15E-08	5.31E+06	2.32E+07	3.75E+01	7.71E+01	1.55E+06	6.51E+06
Bromine (35)	Br-77	1.06E+02	6.51E-03	2.74E+02	1.22E+03	2.49E+02	4.25E+02	9.98E+01	4.19E+02
Bromine (35)	Br-77m	8.51E+04	8.14E-06	2.19E+05	9.76E+05	2.45E+02	4.22E+02	7.97E+04	3.35E+05
Bromine (35)	Br-78	5.64E+04	1.23E-05	6.87E+14	2.89E+15	1.90E+02	8.00E+02	1.94E+15	8.17E+15
Bromine (35)	Br-80	2.06E+04	3.36E-05	7.10E+12	3.12E+13	1.19E+03	2.35E+03	3.25E+13	1.37E+14
Bromine (35)	Br-80m	1.37E+03	5.05E-04	4.87E+03	2.40E+04	2.68E+02	3.64E+02	1.44E+04	6.05E+04
Bromine (35)	Br-82	1.72E+02	4.03E-03	5.59E+01	2.45E+02	3.19E+01	5.70E+01	1.19E+01	5.02E+01

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Bromine (35)	Br-82m	5.94E+04	1.17E-05	1.97E+04	8.64E+04	3.27E+01	5.84E+01	4.22E+03	1.77E+04
Bromine (35)	Br-83	2.53E+03	2.74E-04	4.28E+04	2.28E+05	6.94E+02	8.84E+02	2.67E+06	1.12E+07
Bromine (35)	Br-84	1.15E+04	6.05E-05	6.03E+03	2.56E+04	9.09E+01	3.10E+02	3.57E+03	1.50E+04
Bromine (35)	Br-84m	6.07E+04	1.14E-05	9.88E+14	4.15E+15	6.82E+01	2.86E+02	2.05E+14	8.62E+14
Bromine (35)	Br-85	1.26E+05	5.52E-06	7.12E+05	2.99E+06	8.22E+02	3.45E+03	3.29E+05	1.38E+06
Carbon (6)	C-10	1.14E+06	6.11E-07	5.13E+22	2.16E+23	1.13E+02	4.75E+02	3.32E+22	1.39E+23
Carbon (6)	C-11	1.79E+04	3.88E-05	1.60E+11	6.75E+11	1.78E+02	6.18E+02		
Carbon (6)	C-14	1.22E-04	5.70E+03	3.57E+00	2.30E+01	7.09E+00	8.79E+00		
Calcium (20)	Ca-41	6.79E-06	1.02E+05	7.64E+00	5.89E+01	1.90E+02	2.35E+02		
Calcium (20)	Ca-45	1.55E+00	4.46E-01	4.28E+00	3.71E+01	1.09E+01	1.35E+01	8.26E+09	3.47E+10
Calcium (20)	Ca-47	5.58E+01	1.24E-02	2.27E+01	1.24E+02	1.26E+01	1.65E+01	3.25E+01	1.37E+02
Calcium (20)	Ca-49	4.18E+04	1.66E-05	2.58E+05	1.27E+06	5.04E+01	1.87E+02	3.92E+08	1.65E+09
Cadmium (48)	Cd-101	2.68E+05	2.59E-06	3.16E+05	1.47E+06	2.49E+01	5.35E+01	1.21E+05	5.07E+05
Cadmium (48)	Cd-102	6.62E+04	1.05E-05	3.68E+12	1.55E+13	4.17E+01	1.71E+02	8.22E+11	3.45E+12
Cadmium (48)	Cd-103	4.99E+04	1.39E-05	4.74E+04	2.13E+05	3.61E+01	7.38E+01	1.47E+04	6.17E+04
Cadmium (48)	Cd-104	6.31E+03	1.10E-04	2.74E+03	1.17E+04	7.83E+01	2.34E+02	1.08E+03	4.52E+03
Cadmium (48)	Cd-105	6.56E+03	1.06E-04	3.03E+03	1.35E+04	3.20E+01	5.03E+01	1.21E+03	5.08E+03
Cadmium (48)	Cd-107	9.34E+02	7.42E-04	1.47E+04	8.68E+04	4.65E+02	5.87E+02	1.51E+04	6.35E+04
Cadmium (48)	Cd-109	5.48E-01	1.26E+00	1.15E+00	8.43E+00	6.32E+00	7.83E+00	3.10E+01	1.30E+02
Cadmium (48)	Cd-111m	7.51E+03	9.23E-05	2.51E+04	1.07E+05	5.12E+02	1.23E+03	7.76E+03	3.26E+04
Cadmium (48)	Cd-113	9.00E-17	7.70E+15	8.59E-02	5.45E-01	3.52E-01	4.36E-01		
Cadmium (48)	Cd-113m	4.91E-02	1.41E+01	9.01E-02	5.85E-01	3.72E-01	4.61E-01	3.28E+05	1.38E+06
Cadmium (48)	Cd-115	1.14E+02	6.10E-03	8.77E+01	5.50E+02	1.12E-01	1.39E-01	2.68E+02	1.13E+03
Cadmium (48)	Cd-115m	5.67E+00	1.22E-01	2.79E+00	2.08E+01	1.04E-01	1.29E-01	9.18E+02	3.85E+03
Cadmium (48)	Cd-117	2.44E+03	2.84E-04	1.28E+03	5.70E+03	6.68E+01	1.32E+02	5.60E+02	2.35E+03
Cadmium (48)	Cd-117m	1.81E+03	3.84E-04	6.04E+02	2.61E+03	4.72E+01	1.13E+02	2.22E+02	9.33E+02
Cadmium (48)	Cd-118	7.24E+03	9.57E-05	1.84E+04	8.92E+04	3.51E+02	5.18E+02		
Cadmium (48)	Cd-119	1.35E+05	5.12E-06	7.30E+08	5.69E+09	9.55E+01	3.54E+02	1.08E+10	4.55E+10
Cadmium (48)	Cd-119m	1.66E+05	4.19E-06	1.34E+08	1.04E+09	5.81E+01	2.19E+02	1.98E+09	8.33E+09
Cerium (58)	Ce-130	1.59E+04	4.36E-05	3.61E+09	1.52E+10	6.71E+01	2.44E+02	8.67E+08	3.64E+09
Cerium (58)	Ce-131	3.57E+04	1.94E-05	2.29E+04	1.06E+05	2.63E+01	4.39E+01	6.70E+03	2.81E+04
Cerium (58)	Ce-132	1.73E+03	4.01E-04	6.11E+02	2.76E+03	4.84E+01	9.99E+01	1.80E+02	7.56E+02

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Cerium (58)	Ce-133	3.76E+03	1.85E-04	3.94E+03	1.79E+04	3.79E+00	4.76E+00	1.09E+03	4.59E+03
Cerium (58)	Ce-133m	1.24E+03	5.59E-04	5.61E+02	2.47E+03	3.68E+00	4.70E+00	9.53E+01	4.00E+02
Cerium (58)	Ce-134	8.00E+01	8.66E-03	3.20E+01	1.95E+02	2.33E+01	3.08E+01	1.07E+02	4.48E+02
Cerium (58)	Ce-135	3.43E+02	2.02E-03	3.21E+02	1.45E+03	1.19E+02	2.26E+02	7.72E+01	3.24E+02
Cerium (58)	Ce-137	6.75E+02	1.03E-03	1.29E+04	6.33E+04	4.62E+00	5.72E+00	8.07E+03	3.39E+04
Cerium (58)	Ce-137m	1.76E+02	3.93E-03	3.98E+02	2.70E+03	4.37E+00	5.42E+00	9.91E+02	4.16E+03
Cerium (58)	Ce-139	1.84E+00	3.77E-01	6.93E+00	3.77E+01	2.02E+01	2.53E+01	3.49E+00	1.47E+01
Cerium (58)	Ce-141	7.78E+00	8.91E-02	1.52E+01	1.08E+02	1.05E+01	1.31E+01	6.35E+01	2.66E+02
Cerium (58)	Ce-143	1.84E+02	3.77E-03	1.05E+02	7.14E+02	1.17E+01	1.46E+01	1.79E+02	7.52E+02
Cerium (58)	Ce-144	8.88E-01	7.81E-01	4.39E-01	3.41E+00	2.16E-03	2.68E-03	8.92E+01	3.75E+02
Cerium (58)	Ce-145	1.21E+05	5.73E-06	3.44E+05	2.17E+06	1.13E+02	2.12E+02	1.72E+07	7.24E+07
Californium (98)	Cf-244	1.88E+04	3.69E-05	1.29E+03	9.95E+03	4.32E-04	5.35E-04	4.33E+05	1.82E+06
Californium (98)	Cf-246	1.70E+02	4.08E-03	1.85E+01	1.70E+02	1.73E-04	2.14E-04	5.13E+05	2.15E+06
Californium (98)	Cf-247	1.95E+03	3.55E-04	9.45E+03	5.22E+04	6.05E-05	7.50E-05	4.38E+03	1.84E+04
Californium (98)	Cf-248	7.57E-01	9.15E-01	6.44E-02	6.16E-01	1.79E-04	2.22E-04	5.07E+03	2.13E+04
Californium (98)	Cf-249	1.97E-03	3.51E+02	5.06E-03	3.80E-02	8.82E-05	1.09E-04	1.23E+00	5.17E+00
Californium (98)	Cf-250	5.30E-02	1.31E+01	1.05E-02	8.52E-02	1.17E-04	1.44E-04	4.35E+02	1.83E+03
Californium (98)	Cf-251	7.70E-04	9.00E+02	4.97E-03	3.73E-02	5.34E-05	6.62E-05	2.35E+00	9.89E+00
Californium (98)	Cf-252	2.62E-01	2.65E+00	1.69E-02	1.65E-01	6.53E-05	8.10E-05	2.26E+00	9.49E+00
Californium (98)	Cf-253	1.42E+01	4.88E-02	2.52E+00	2.33E+01	8.72E-05	1.08E-04	6.65E+03	2.79E+04
Californium (98)	Cf-254	4.18E+00	1.66E-01	1.49E-02	1.24E-01	7.77E-04	9.62E-04	7.64E-03	3.21E-02
Californium (98)	Cf-255	4.29E+03	1.62E-04	7.14E+02	6.63E+03	5.31E-05	6.58E-05		
Chlorine (17)	Cl-34	1.43E+07	4.84E-08	5.01E+29	2.10E+30	1.87E+02	7.86E+02	7.30E+33	3.07E+34
Chlorine (17)	Cl-34m	1.14E+04	6.09E-05	5.17E+03	2.20E+04	6.59E+01	2.31E+02	2.64E+03	1.11E+04
Chlorine (17)	Cl-36	2.30E-06	3.01E+05	1.78E+00	1.38E+01	1.09E+00	1.35E+00	4.94E+04	2.07E+05
Chlorine (17)	Cl-38	9.78E+03	7.09E-05	5.97E+03	2.56E+04	1.05E+02	3.32E+02	5.37E+03	2.26E+04
Chlorine (17)	Cl-39	6.55E+03	1.06E-04	3.99E+03	1.70E+04	1.09E+02	3.41E+02	1.71E+03	7.17E+03
Chlorine (17)	Cl-40	2.70E+05	2.57E-06	3.96E+18	1.66E+19	4.27E+01	1.79E+02	1.30E+18	5.45E+18
Curium (96)	Cm-238	2.53E+03	2.74E-04	1.21E+03	6.37E+03	1.81E-04	2.24E-04	4.89E+02	2.05E+03
Curium (96)	Cm-239	2.09E+03	3.31E-04	3.03E+03	1.47E+04	9.77E-05	1.21E-04	6.59E+02	2.77E+03
Curium (96)	Cm-240	9.37E+00	7.40E-02	6.43E-01	4.97E+00	4.32E-04	5.35E-04	2.16E+02	9.06E+02
Curium (96)	Cm-241	7.71E+00	8.99E-02	6.35E+00	3.60E+01	2.05E-04	2.54E-04	2.24E+00	9.41E+00

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Curium (96)	Cm-242	1.55E+00	4.46E-01	2.17E-01	2.05E+00	1.73E-04	2.15E-04	8.00E+03	3.36E+04
Curium (96)	Cm-243	2.38E-02	2.91E+01	1.27E-02	8.99E-02	9.43E-05	1.17E-04	2.11E+00	8.85E+00
Curium (96)	Cm-244	3.83E-02	1.81E+01	1.53E-02	1.11E-01	1.86E-04	2.30E-04	5.53E+03	2.32E+04
Curium (96)	Cm-245	8.15E-05	8.50E+03	5.41E-03	3.72E-02	1.38E-04	1.71E-04	2.41E+00	1.01E+01
Curium (96)	Cm-246	1.46E-04	4.76E+03	9.38E-03	6.46E-02	1.22E-04	1.51E-04	1.00E+03	4.22E+03
Curium (96)	Cm-247	4.44E-08	1.56E+07	3.05E-03	2.08E-02	6.86E-05	8.50E-05	6.64E-01	2.79E+00
Curium (96)	Cm-248	1.99E-06	3.48E+05	2.49E-03	1.71E-02	6.48E-05	8.03E-05	2.72E-01	1.14E+00
Curium (96)	Cm-249	5.68E+03	1.22E-04	1.21E+04	8.53E+04	8.82E-05	1.09E-04	3.61E+05	1.52E+06
Curium (96)	Cm-250	8.35E-05	8.30E+03	3.64E-04	2.50E-03	1.68E-05	2.08E-05	2.86E-03	1.20E-02
Curium (96)	Cm-251	2.17E+04	3.20E-05	7.66E+04	4.47E+05	5.34E-05	6.62E-05	6.47E+04	2.72E+05
Cobalt (27)	Co-54m	2.46E+05	2.82E-06	8.00E+18	3.36E+19	4.83E+01	2.03E+02	1.68E+18	7.07E+18
Cobalt (27)	Co-55	3.46E+02	2.00E-03	1.25E+02	5.82E+02	2.19E+01	3.22E+01	7.03E+01	2.95E+02
Cobalt (27)	Co-56	3.28E+00	2.12E-01	6.56E-01	3.21E+00	5.29E+00	7.08E+00	2.01E-01	8.44E-01
Cobalt (27)	Co-57	9.31E-01	7.44E-01	5.89E+00	3.42E+01	3.81E+01	4.80E+01	3.18E+00	1.34E+01
Cobalt (27)	Co-58	3.57E+00	1.94E-01	2.48E+00	1.22E+01	1.71E+01	2.25E+01	1.58E+00	6.62E+00
Cobalt (27)	Co-58m	6.72E+02	1.03E-03	4.62E+02	2.27E+03	1.69E+01	2.23E+01	2.96E+02	1.24E+03
Cobalt (27)	Co-60	1.31E-01	5.27E+00	2.13E-01	1.23E+00	1.30E+00	1.63E+00	1.29E-01	5.43E-01
Cobalt (27)	Co-60m	3.48E+04	1.99E-05	5.65E+04	3.26E+05	1.30E+00	1.63E+00	3.43E+04	1.44E+05
Cobalt (27)	Co-61	3.68E+03	1.88E-04	1.87E+04	8.78E+04	5.50E+02	8.27E+02	1.03E+04	4.32E+04
Cobalt (27)	Co-62	2.43E+05	2.85E-06	9.92E+18	4.17E+19	1.13E+02	4.74E+02	5.34E+18	2.24E+19
Cobalt (27)	Co-62m	2.62E+04	2.65E-05	4.47E+12	1.88E+13	6.61E+01	2.54E+02	1.37E+12	5.74E+12
Chromium (24)	Cr-48	2.82E+02	2.46E-03	5.96E+01	2.83E+02	1.07E+01	1.52E+01	2.18E+01	9.15E+01
Chromium (24)	Cr-49	8.61E+03	8.05E-05	6.94E+03	2.96E+04	1.25E+02	2.86E+02	2.88E+03	1.21E+04
Chromium (24)	Cr-51	9.13E+00	7.59E-02	1.64E+02	8.40E+02	8.68E+02	1.19E+03	4.27E+02	1.80E+03
Chromium (24)	Cr-55	1.04E+05	6.65E-06	4.59E+17	1.93E+18	8.93E+03	3.75E+04	6.58E+20	2.76E+21
Chromium (24)	Cr-56	6.13E+04	1.13E-05	3.12E+04	1.36E+05	7.65E+01	1.95E+02	1.51E+04	6.33E+04
Cesium (55)	Cs-121	1.41E+05	4.92E-06	4.86E+04	2.14E+05	2.77E+01	5.38E+01	1.66E+04	6.97E+04
Cesium (55)	Cs-121m	1.79E+05	3.87E-06	1.34E+05	6.25E+05	2.69E+01	5.31E+01	5.09E+04	2.14E+05
Cesium (55)	Cs-123	6.19E+04	1.12E-05	6.20E+04	2.81E+05	9.43E+00	1.25E+01	1.95E+04	8.20E+04
Cesium (55)	Cs-124	7.10E+05	9.77E-07	3.79E+21	1.59E+22	1.64E+02	6.91E+02	4.91E+21	2.06E+22
Cesium (55)	Cs-125	8.09E+03	8.56E-05	8.59E+02	5.69E+03	2.61E+00	3.26E+00	2.54E+03	1.06E+04
Cesium (55)	Cs-126	2.22E+05	3.12E-06	2.98E+18	1.25E+19	1.69E+02	7.09E+02	2.26E+18	9.49E+18

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Cesium (55)	Cs-127	9.71E+02	7.13E-04	1.28E+03	5.43E+03	2.27E+02	6.01E+02	3.39E+02	1.42E+03
Cesium (55)	Cs-128	1.00E+05	6.93E-06	4.54E+17	1.91E+18	2.21E+02	9.29E+02	4.16E+17	1.75E+18
Cesium (55)	Cs-129	1.89E+02	3.66E-03	5.83E+02	2.56E+03	2.94E+02	4.93E+02	1.82E+02	7.63E+02
Cesium (55)	Cs-130	1.25E+04	5.56E-05	6.05E+08	2.57E+09	3.49E+02	1.12E+03	5.85E+08	2.46E+09
Cesium (55)	Cs-130m	1.05E+05	6.58E-06	4.51E+09	1.92E+10	3.24E+02	1.06E+03	4.36E+09	1.83E+10
Cesium (55)	Cs-131	2.61E+01	2.65E-02	5.01E+02	2.85E+03	7.49E+02	9.41E+02	7.48E+02	3.14E+03
Cesium (55)	Cs-132	3.90E+01	1.78E-02	3.81E+01	1.78E+02	8.39E+01	1.31E+02	1.55E+01	6.52E+01
Cesium (55)	Cs-134	3.36E-01	2.06E+00	1.19E-01	6.40E-01	1.94E+00	2.42E+00	2.04E-01	8.56E-01
Cesium (55)	Cs-134m	2.09E+03	3.31E-04	7.29E+02	3.93E+03	1.93E+00	2.42E+00	1.24E+03	5.22E+03
Cesium (55)	Cs-135	3.01E-07	2.30E+06	8.56E-01	5.04E+00	3.49E+00	4.32E+00		
Cesium (55)	Cs-135m	6.87E+03	1.01E-04	4.01E+03	1.69E+04	3.39E+00	4.28E+00	1.28E+03	5.39E+03
Cesium (55)	Cs-136	1.92E+01	3.61E-02	5.12E+00	2.54E+01	1.24E+01	1.70E+01	1.67E+00	7.01E+00
Cesium (55)	Cs-137	2.30E-02	3.02E+01	1.56E-01	8.69E-01	1.04E+00	1.30E+00	1.05E+00	4.41E+00
Cesium (55)	Cs-138	1.09E+04	6.36E-05	4.21E+03	1.79E+04	7.09E+01	2.46E+02	1.36E+03	5.72E+03
Cesium (55)	Cs-138m	1.25E+05	5.54E-06	3.10E+08	1.31E+09	7.36E+01	2.63E+02	1.00E+08	4.21E+08
Cesium (55)	Cs-139	3.93E+04	1.76E-05	1.64E+05	8.04E+05	2.66E+02	5.53E+02	3.52E+05	1.48E+06
Cesium (55)	Cs-140	3.43E+05	2.02E-06	6.34E+04	3.53E+05	4.91E+00	6.62E+00	3.95E+04	1.66E+05
Copper (29)	Cu-57	1.11E+08	6.22E-09	4.17E+07	1.95E+08	1.73E+01	2.71E+01	2.11E+07	8.86E+07
Copper (29)	Cu-59	2.68E+05	2.58E-06	1.11E+12	8.38E+12	3.52E+01	5.36E+01	2.45E+15	1.03E+16
Copper (29)	Cu-60	1.54E+04	4.51E-05	2.17E+09	9.18E+09	4.54E+01	1.73E+02	6.84E+08	2.87E+09
Copper (29)	Cu-61	1.82E+03	3.80E-04	1.86E+03	8.05E+03	1.61E+02	3.77E+02	1.82E+03	7.65E+03
Copper (29)	Cu-62	3.77E+04	1.84E-05	8.67E+13	3.64E+14	1.94E+02	8.15E+02	2.57E+15	1.08E+16
Copper (29)	Cu-64	4.78E+02	1.45E-03	1.77E+03	8.43E+03	2.47E+02	3.65E+02	4.81E+03	2.02E+04
Copper (29)	Cu-66	7.11E+04	9.74E-06	1.50E+16	6.30E+16	1.62E+03	6.82E+03	9.56E+16	4.02E+17
Copper (29)	Cu-67	9.82E+01	7.06E-03	3.17E+02	1.86E+03	6.37E+01	8.09E+01	4.43E+02	1.86E+03
Copper (29)	Cu-69	1.28E+05	5.42E-06	3.06E+06	1.62E+07	2.78E+02	7.84E+02	2.12E+11	8.89E+11
Dysprosium (66)	Dy-148	1.10E+05	6.28E-06	3.81E+04	1.70E+05	6.58E-03	8.15E-03	1.15E+04	4.83E+04
Dysprosium (66)	Dy-149	8.67E+04	7.99E-06	4.44E+04	2.09E+05	7.10E+00	9.69E+00	1.13E+04	4.75E+04
Dysprosium (66)	Dy-150	5.08E+04	1.36E-05	1.64E+04	7.46E+04	1.44E-03	1.78E-03	3.65E+03	1.53E+04
Dysprosium (66)	Dy-151	2.03E+04	3.41E-05	1.39E+04	6.54E+04	3.18E-02	3.94E-02	2.59E+03	1.09E+04
Dysprosium (66)	Dy-152	2.55E+03	2.72E-04	1.10E+03	5.09E+03	7.13E-04	8.84E-04	3.05E+02	1.28E+03
Dysprosium (66)	Dy-153	9.49E+02	7.31E-04	5.62E+02	2.63E+03	1.31E+01	1.72E+01	1.03E+02	4.31E+02

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Dysprosium (66)	Dy-154	2.31E-07	3.00E+06	2.93E-02	2.26E-01	1.13E-03	1.40E-03		
Dysprosium (66)	Dy-155	6.13E+02	1.13E-03	5.54E+02	2.58E+03	6.88E+01	1.06E+02	1.36E+02	5.70E+02
Dysprosium (66)	Dy-157	7.46E+02	9.29E-04	1.88E+03	8.19E+03	1.24E+01	1.55E+01	4.87E+02	2.05E+03
Dysprosium (66)	Dy-159	1.75E+00	3.96E-01	2.00E+01	1.15E+02	8.42E+01	1.05E+02	1.70E+01	7.12E+01
Dysprosium (66)	Dy-165	2.60E+03	2.66E-04	1.81E+04	9.75E+04	5.32E+02	7.00E+02	7.66E+04	3.22E+05
Dysprosium (66)	Dy-165m	2.90E+05	2.39E-06	2.05E+06	1.10E+07	5.22E+02	7.07E+02	8.66E+06	3.64E+07
Dysprosium (66)	Dy-166	7.44E+01	9.32E-03	3.67E+01	2.78E+02	1.34E+01	1.67E+01	4.19E+02	1.76E+03
Dysprosium (66)	Dy-167	5.87E+04	1.18E-05	1.32E+05	5.85E+05	1.52E+02	3.63E+02	5.37E+04	2.25E+05
Dysprosium (66)	Dy-168	4.19E+04	1.66E-05	9.95E+13	4.18E+14	1.54E+02	6.48E+02	3.53E+13	1.48E+14
Erbium (68)	Er-154	9.77E+04	7.10E-06	6.28E+06	2.84E+07	1.13E-03	1.41E-03	1.40E+06	5.86E+06
Erbium (68)	Er-156	1.87E+04	3.71E-05	8.13E+03	3.45E+04	7.58E+01	2.32E+02	1.24E+03	5.21E+03
Erbium (68)	Er-159	1.01E+04	6.85E-05	6.72E+03	2.88E+04	5.23E+01	8.61E+01	1.29E+03	5.42E+03
Erbium (68)	Er-161	1.89E+03	3.66E-04	1.65E+03	7.08E+03	1.47E+02	3.88E+02	3.46E+02	1.45E+03
Erbium (68)	Er-163	4.86E+03	1.43E-04	1.20E+05	5.14E+05	1.51E+02	1.90E+02	5.22E+04	2.19E+05
Erbium (68)	Er-165	5.86E+02	1.18E-03	1.23E+04	5.78E+04	2.95E+03	4.62E+03	6.93E+03	2.91E+04
Erbium (68)	Er-167m	9.63E+06	7.19E-08	1.25E+30	5.26E+30	2.22E+03	9.31E+03	7.57E+29	3.19E+30
Erbium (68)	Er-169	2.69E+01	2.58E-02	1.18E+02	9.61E+02	3.41E+01	4.22E+01	1.45E+07	6.09E+07
Erbium (68)	Er-171	8.08E+02	8.58E-04	1.23E+03	6.22E+03	2.51E+01	3.21E+01	4.60E+02	1.93E+03
Erbium (68)	Er-172	1.23E+02	5.63E-03	4.50E+01	2.65E+02	1.44E+01	1.88E+01	4.34E+01	1.82E+02
Erbium (68)	Er-173	2.54E+05	2.73E-06	4.14E+05	2.02E+06	8.88E+01	1.78E+02	3.03E+05	1.27E+06
Einsteinium (99)	Es-249	3.56E+03	1.94E-04	4.30E+03	2.30E+04	8.84E-05	1.10E-04	1.74E+03	7.31E+03
Einsteinium (99)	Es-250	7.06E+02	9.82E-04	1.08E+02	7.47E+02	1.18E-04	1.47E-04	3.89E+01	1.63E+02
Einsteinium (99)	Es-250m	2.73E+03	2.53E-04	4.84E+02	3.60E+03	1.17E-04	1.44E-04	1.13E+03	4.74E+03
Einsteinium (99)	Es-251	1.84E+02	3.77E-03	5.18E+02	3.28E+03	5.34E-05	6.62E-05	4.74E+02	1.99E+03
Einsteinium (99)	Es-253	1.24E+01	5.61E-02	2.77E+00	2.45E+01	8.76E-05	1.08E-04	7.82E+03	3.28E+04
Einsteinium (99)	Es-254	9.17E-01	7.55E-01	6.29E-02	5.65E-01	1.14E-04	1.41E-04	7.24E-01	3.04E+00
Einsteinium (99)	Es-254m	1.54E+02	4.49E-03	1.79E+01	1.39E+02	1.18E-04	1.47E-04	1.01E+02	4.25E+02
Einsteinium (99)	Es-255	6.36E+00	1.09E-01	1.06E+00	9.90E+00	5.31E-05	6.58E-05	1.40E+02	5.88E+02
Einsteinium (99)	Es-256	1.43E+04	4.83E-05	5.64E+02	3.06E+03	8.02E-04	9.93E-04	4.75E+01	1.99E+02
Europium (63)	Eu-142	9.34E+06	7.42E-08	1.18E+08	5.14E+08	7.47E+01	2.30E+02	1.84E+08	7.74E+08
Europium (63)	Eu-142m	2.98E+05	2.33E-06	2.26E+05	9.87E+05	4.06E+01	1.43E+02	3.54E+05	1.49E+06
Europium (63)	Eu-143	1.41E+05	4.93E-06	4.91E+05	2.36E+06	1.18E+01	1.59E+01	2.60E+05	1.09E+06

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Europium (63)	Eu-144	2.14E+06	3.23E-07	4.35E+24	1.83E+25	1.72E+02	7.24E+02	9.24E+24	3.88E+25
Europium (63)	Eu-145	4.27E+01	1.62E-02	2.38E+01	1.12E+02	3.40E+00	4.28E+00	7.67E+00	3.22E+01
Europium (63)	Eu-146	5.49E+01	1.26E-02	1.73E+01	7.97E+01	1.63E-03	2.02E-03	3.43E+00	1.44E+01
Europium (63)	Eu-147	1.05E+01	6.60E-02	1.41E+01	6.99E+01	1.79E-03	2.22E-03	4.60E+00	1.93E+01
Europium (63)	Eu-148	4.64E+00	1.49E-01	1.53E+00	7.13E+00	1.06E-03	1.32E-03	2.71E-01	1.14E+00
Europium (63)	Eu-149	2.72E+00	2.55E-01	1.81E+01	1.05E+02	8.76E+01	1.10E+02	1.67E+01	7.01E+01
Europium (63)	Eu-150	1.88E-02	3.69E+01	4.31E-01	2.08E+00	3.25E-01	4.03E-01	8.63E-02	3.62E-01
Europium (63)	Eu-150m	4.74E+02	1.46E-03	1.52E+03	1.00E+04	1.51E-03	1.88E-03	1.63E+04	6.83E+04
Europium (63)	Eu-152	5.12E-02	1.35E+01	5.15E-01	2.62E+00	2.54E-03	3.15E-03	1.68E-01	7.06E-01
Europium (63)	Eu-152m	6.52E+02	1.06E-03	9.61E+02	5.13E+03	9.90E-04	1.23E-03	1.22E+03	5.11E+03
Europium (63)	Eu-152n	3.79E+03	1.83E-04	2.11E+04	1.00E+05	2.54E-03	3.15E-03	7.16E+03	3.01E+04
Europium (63)	Eu-154	8.06E-02	8.59E+00	4.22E-01	2.26E+00	3.78E-01	4.70E-01	2.09E-01	8.77E-01
Europium (63)	Eu-154m	7.92E+03	8.75E-05	3.01E+04	1.52E+05	3.78E-01	4.70E-01	1.25E+04	5.24E+04
Europium (63)	Eu-155	1.46E-01	4.76E+00	4.13E+00	2.74E+01	6.69E+00	8.30E+00	8.36E+00	3.51E+01
Europium (63)	Eu-156	1.67E+01	4.16E-02	6.26E+00	3.46E+01	9.28E+00	1.20E+01	5.80E+00	2.44E+01
Europium (63)	Eu-157	4.00E+02	1.73E-03	5.62E+02	3.14E+03	9.91E+01	1.36E+02	3.12E+02	1.31E+03
Europium (63)	Eu-158	7.94E+03	8.73E-05	5.25E+03	2.24E+04	1.22E+02	3.68E+02	1.79E+03	7.53E+03
Europium (63)	Eu-159	2.01E+04	3.44E-05	5.22E+04	3.57E+05	9.58E+01	1.34E+02	3.15E+05	1.32E+06
Fluorine (9)	F-17	3.39E+05	2.04E-06	5.57E+19	2.34E+20	1.94E+02	8.15E+02	1.03E+23	4.31E+23
Fluorine (9)	F-18	3.32E+03	2.09E-04	3.37E+03	1.43E+04	1.55E+02	4.16E+02		
Iron (26)	Fe-52	7.34E+02	9.45E-04	1.68E+02	7.76E+02	2.80E+01	5.15E+01	1.12E+02	4.69E+02
Iron (26)	Fe-53	4.28E+04	1.62E-05	1.14E+13	8.61E+13	6.97E+01	1.22E+02	1.71E+14	7.19E+14
Iron (26)	Fe-53m	1.44E+05	4.81E-06	3.69E+13	2.71E+14	3.28E+01	8.32E+01	3.97E+14	1.67E+15
Iron (26)	Fe-55	2.53E-01	2.74E+00	4.64E+00	4.57E+01	4.83E+01	5.99E+01	1.02E+10	4.29E+10
Iron (26)	Fe-59	5.68E+00	1.22E-01	2.33E+00	1.33E+01	9.23E+00	1.19E+01	2.72E+00	1.14E+01
Iron (26)	Fe-60	4.62E-07	1.50E+06	1.42E-02	1.05E-01	1.32E-01	1.64E-01		
Iron (26)	Fe-61	6.09E+04	1.14E-05	3.10E+05	1.45E+06	1.08E+02	3.34E+02	1.70E+05	7.16E+05
Iron (26)	Fe-62	3.21E+05	2.16E-06	3.59E+18	1.51E+19	8.72E+01	3.66E+02	1.94E+18	8.14E+18
Fermium (100)	Fm-251	1.15E+03	6.05E-04	2.07E+03	1.16E+04	5.36E-05	6.64E-05	1.18E+03	4.94E+03
Fermium (100)	Fm-252	2.39E+02	2.90E-03	1.77E+01	1.66E+02	1.79E-04	2.22E-04	6.45E+05	2.71E+06
Fermium (100)	Fm-253	8.43E+01	8.22E-03	1.76E+01	1.52E+02	8.75E-05	1.08E-04	3.84E+02	1.61E+03
Fermium (100)	Fm-254	1.87E+03	3.70E-04	3.50E+02	2.85E+03	1.17E-04	1.45E-04	9.21E+05	3.87E+06

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Fermium (100)	Fm-255	3.02E+02	2.29E-03	1.75E+02	1.42E+03	5.34E-05	6.62E-05	1.49E+04	6.25E+04
Fermium (100)	Fm-256	2.31E+03	3.00E-04	9.09E+01	4.94E+02	8.02E-04	9.94E-04	7.65E+00	3.21E+01
Fermium (100)	Fm-257	2.52E+00	2.75E-01	1.48E-01	1.50E+00	8.59E-05	1.06E-04	4.61E+00	1.94E+01
Francium (87)	Fr-212	1.82E+04	3.81E-05	8.80E+01	7.44E+02	5.89E-03	7.29E-03	1.23E+03	5.18E+03
Francium (87)	Fr-219	1.09E+09	6.34E-10	1.50E+21	6.30E+21	3.31E+03	1.39E+04	1.75E+23	7.36E+23
Francium (87)	Fr-220	7.98E+05	8.69E-07	5.26E+05	2.32E+06	2.60E+00	3.27E+00	1.71E+05	7.17E+05
Francium (87)	Fr-221	7.43E+04	9.32E-06	2.19E+05	1.17E+06	1.23E+00	1.52E+00	6.51E+05	2.73E+06
Francium (87)	Fr-222	2.57E+04	2.70E-05	7.20E+02	6.18E+03	4.01E-03	4.97E-03	3.28E+08	1.38E+09
Francium (87)	Fr-223	1.66E+04	4.19E-05	1.71E+02	2.11E+03	4.63E-03	5.74E-03	3.26E+04	1.37E+05
Francium (87)	Fr-224	1.09E+05	6.34E-06	1.76E+03	1.93E+04	1.16E-02	1.44E-02	2.17E+04	9.11E+04
Francium (87)	Fr-227	1.47E+05	4.70E-06	1.72E+04	1.45E+05	5.48E-04	6.80E-04	5.07E+06	2.13E+07
Gallium (31)	Ga-64	1.39E+05	5.00E-06	6.37E+16	2.68E+17	5.45E+01	2.29E+02	2.72E+16	1.14E+17
Gallium (31)	Ga-65	2.40E+04	2.89E-05	1.37E+04	8.50E+04	1.47E+01	2.01E+01	2.97E+04	1.25E+05
Gallium (31)	Ga-66	6.40E+02	1.08E-03	1.98E+02	9.25E+02	3.71E+01	7.22E+01	1.17E+02	4.90E+02
Gallium (31)	Ga-67	7.76E+01	8.93E-03	2.82E+02	1.47E+03	1.31E+02	1.74E+02	1.23E+02	5.17E+02
Gallium (31)	Ga-68	5.38E+03	1.29E-04	4.57E+03	1.97E+04	1.61E+02	4.39E+02	2.16E+04	9.07E+04
Gallium (31)	Ga-70	1.72E+04	4.02E-05	6.72E+11	3.06E+12	1.85E+03	2.61E+03	3.35E+13	1.41E+14
Gallium (31)	Ga-72	4.31E+02	1.61E-03	1.26E+02	5.77E+02	3.33E+01	6.28E+01	4.42E+01	1.86E+02
Gallium (31)	Ga-73	1.25E+03	5.55E-04	2.17E+03	1.05E+04	1.68E+02	2.63E+02	7.07E+02	2.97E+03
Gallium (31)	Ga-74	4.49E+04	1.54E-05	6.41E+13	2.69E+14	5.76E+01	2.42E+02	1.66E+13	6.96E+13
Gadolinium (64)	Gd-142	3.11E+05	2.23E-06	2.36E+05	1.03E+06	5.33E+01	1.78E+02	3.70E+05	1.55E+06
Gadolinium (64)	Gd-143m	1.99E+05	3.49E-06	6.94E+05	3.34E+06	1.04E+01	1.53E+01	3.67E+05	1.54E+06
Gadolinium (64)	Gd-144	8.15E+04	8.50E-06	8.82E+15	3.70E+16	9.47E+01	3.98E+02	8.70E+15	3.65E+16
Gadolinium (64)	Gd-145	1.58E+04	4.38E-05	8.83E+03	4.15E+04	3.25E+00	4.22E+00	2.84E+03	1.19E+04
Gadolinium (64)	Gd-145m	2.57E+05	2.70E-06	1.43E+05	6.74E+05	3.22E+00	4.21E+00	4.61E+04	1.94E+05
Gadolinium (64)	Gd-146	5.24E+00	1.32E-01	1.32E+00	6.43E+00	1.63E-03	2.02E-03	2.91E-01	1.22E+00
Gadolinium (64)	Gd-147	1.59E+02	4.35E-03	6.19E+01	2.91E+02	1.79E-03	2.22E-03	1.29E+01	5.40E+01
Gadolinium (64)	Gd-148	9.29E-03	7.46E+01	3.16E-02	2.45E-01	6.58E-03	8.15E-03		
Gadolinium (64)	Gd-149	2.73E+01	2.54E-02	2.68E+01	1.37E+02	2.63E+01	3.44E+01	8.18E+00	3.44E+01
Gadolinium (64)	Gd-150	3.87E-07	1.79E+06	3.33E-02	2.55E-01	1.35E-03	1.67E-03		
Gadolinium (64)	Gd-151	2.04E+00	3.40E-01	1.14E+01	7.01E+01	3.30E+01	4.12E+01	1.09E+01	4.58E+01
Gadolinium (64)	Gd-152	6.42E-15	1.08E+14	4.25E-02	3.26E-01	7.13E-04	8.83E-04		

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Gadolinium (64)	Gd-153	1.05E+00	6.59E-01	6.02E+00	3.56E+01	1.64E+01	2.04E+01	3.26E+00	1.37E+01
Gadolinium (64)	Gd-159	3.29E+02	2.11E-03	8.52E+02	5.83E+03	1.20E+02	1.53E+02	5.14E+03	2.16E+04
Gadolinium (64)	Gd-162	4.34E+04	1.60E-05	1.90E+13	7.99E+13	1.29E+02	5.44E+02	4.48E+12	1.88E+13
Germanium (32)	Ge-66	2.69E+03	2.58E-04	6.70E+02	3.09E+03	3.05E+01	6.00E+01	3.01E+02	1.26E+03
Germanium (32)	Ge-67	1.93E+04	3.60E-05	7.00E+04	3.65E+05	6.39E+01	1.24E+02	3.06E+04	1.29E+05
Germanium (32)	Ge-68	9.34E-01	7.42E-01	7.99E-01	4.16E+00	1.29E+00	1.61E+00	6.17E+00	2.59E+01
Germanium (32)	Ge-69	1.55E+02	4.46E-03	1.38E+02	6.09E+02	8.61E+01	1.52E+02	6.26E+01	2.63E+02
Germanium (32)	Ge-71	2.21E+01	3.13E-02	3.15E+03	2.48E+04	3.03E+03	3.75E+03	3.18E+05	1.34E+06
Germanium (32)	Ge-75	4.40E+03	1.57E-04	4.03E+04	1.92E+05	8.12E+02	1.14E+03	2.14E+05	8.99E+05
Germanium (32)	Ge-77	5.37E+02	1.29E-03	3.27E+02	1.55E+03	3.71E+01	5.38E+01	1.06E+02	4.44E+02
Germanium (32)	Ge-78	4.14E+03	1.67E-04	2.10E+03	9.22E+03	7.40E+01	1.63E+02	1.09E+03	4.59E+03
Hydrogen (1)	H-3	5.63E-02	1.23E+01	5.07E+01	3.28E+02	1.51E+02	1.87E+02		
Hafnium (72)	Hf-167	1.78E+05	3.90E-06	7.07E+04	3.20E+05	2.06E+01	3.18E+01	1.18E+04	4.96E+04
Hafnium (72)	Hf-169	1.12E+05	6.16E-06	4.56E+04	2.25E+05	9.15E+00	1.22E+01	9.14E+03	3.84E+04
Hafnium (72)	Hf-170	3.79E+02	1.83E-03	1.01E+02	4.65E+02	2.43E+01	4.14E+01	2.10E+01	8.82E+01
Hafnium (72)	Hf-172	3.71E-01	1.87E+00	3.43E-01	1.76E+00	1.48E+00	1.86E+00	6.90E-02	2.90E-01
Hafnium (72)	Hf-173	2.57E+02	2.69E-03	3.71E+02	1.81E+03	1.03E+01	1.30E+01	7.57E+01	3.18E+02
Hafnium (72)	Hf-174	3.47E-16	2.00E+15	7.17E-03	5.24E-02	8.23E-03	1.02E-02		
Hafnium (72)	Hf-175	3.61E+00	1.92E-01	6.16E+00	3.15E+01	2.69E+01	3.44E+01	2.12E+00	8.91E+00
Hafnium (72)	Hf-177m	7.09E+03	9.78E-05	2.91E+03	1.23E+04	7.37E+01	2.14E+02	1.29E+02	5.40E+02
Hafnium (72)	Hf-178m	2.24E-02	3.10E+01	2.22E-01	1.18E+00	1.89E-01	2.35E-01	2.70E-02	1.13E-01
Hafnium (72)	Hf-179m	1.01E+01	6.86E-02	5.92E+00	3.11E+01	8.57E+00	1.09E+01	1.03E+00	4.34E+00
Hafnium (72)	Hf-180m	1.10E+03	6.28E-04	9.69E+02	4.23E+03	1.16E+02	2.37E+02	1.26E+02	5.27E+02
Hafnium (72)	Hf-181	5.97E+00	1.16E-01	4.88E+00	2.76E+01	6.58E+00	8.25E+00	2.57E+00	1.08E+01
Hafnium (72)	Hf-182	7.70E-08	9.00E+06	2.51E-01	1.42E+00	1.38E-01	1.71E-01	1.22E-01	5.12E-01
Hafnium (72)	Hf-182m	5.92E+03	1.17E-04	2.75E+03	1.28E+04	3.12E-01	3.88E-01	5.13E+02	2.15E+03
Hafnium (72)	Hf-183	5.69E+03	1.22E-04	2.81E+03	1.48E+04	1.56E+01	2.05E+01	1.09E+03	4.58E+03
Hafnium (72)	Hf-184	1.47E+03	4.70E-04	5.53E+02	2.65E+03	3.33E+01	5.23E+01	9.79E+01	4.11E+02
Mercury (80)	Hg-190	1.82E+04	3.81E-05	7.62E+03	3.22E+04	4.32E-03	5.36E-03	1.20E+03	5.02E+03
Mercury (80)	Hg-191m	7.17E+03	9.67E-05	2.60E+03	1.15E+04	3.22E+01	5.44E+01	3.62E+02	1.52E+03
Mercury (80)	Hg-192	1.25E+03	5.54E-04	5.13E+02	2.24E+03	2.56E+01	4.02E+01	9.12E+01	3.83E+02
Mercury (80)	Hg-193	1.60E+03	4.34E-04	1.37E+03	6.07E+03	2.17E+01	2.91E+01	2.64E+02	1.11E+03

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Mercury (80)	Hg-193m	5.14E+02	1.35E-03	2.86E+02	1.31E+03	9.75E+00	1.27E+01	6.95E+01	2.92E+02
Mercury (80)	Hg-194	1.58E-03	4.40E+02	5.06E-01	2.59E+00	1.74E+00	2.17E+00	1.78E-01	7.46E-01
Mercury (80)	Hg-195	5.77E+02	1.20E-03	1.32E+03	6.83E+03	1.18E+01	1.48E+01	4.83E+02	2.03E+03
Mercury (80)	Hg-195m	1.46E+02	4.75E-03	1.71E+02	9.80E+02	3.71E+00	4.62E+00	8.16E+01	3.43E+02
Mercury (80)	Hg-197	9.35E+01	7.41E-03	4.28E+02	2.67E+03	8.60E+00	1.07E+01	3.18E+02	1.34E+03
Mercury (80)	Hg-197m	2.55E+02	2.72E-03	4.36E+02	2.82E+03	3.95E+00	4.91E+00	4.12E+02	1.73E+03
Mercury (80)	Hg-199m	8.54E+03	8.12E-05	4.23E+04	1.85E+05	1.92E+02	2.68E+02	1.04E+04	4.35E+04
Mercury (80)	Hg-203	5.43E+00	1.28E-01	9.58E+00	5.47E+01	5.62E+00	7.00E+00	1.07E+01	4.48E+01
Mercury (80)	Hg-205	7.00E+04	9.89E-06	4.45E+16	1.87E+17	1.44E+04	6.06E+04	5.88E+17	2.47E+18
Mercury (80)	Hg-206	4.47E+04	1.55E-05	6.52E+14	2.74E+15	1.50E+03	6.30E+03	1.19E+15	5.00E+15
Mercury (80)	Hg-207	1.26E+05	5.52E-06	1.15E+17	4.84E+17	6.95E+01	2.92E+02	4.08E+17	1.71E+18
Holmium (67)	Ho-150	2.85E+05	2.44E-06	9.20E+04	4.18E+05	1.44E-03	1.78E-03	2.04E+04	8.58E+04
Holmium (67)	Ho-153	1.81E+05	3.82E-06	1.07E+05	5.01E+05	1.23E+01	1.68E+01	1.95E+04	8.20E+04
Holmium (67)	Ho-153m	3.92E+04	1.77E-05	2.32E+04	1.08E+05	1.22E+01	1.68E+01	4.23E+03	1.78E+04
Holmium (67)	Ho-154	3.10E+04	2.24E-05	7.57E+07	3.28E+08	1.13E-03	1.40E-03	1.72E+07	7.24E+07
Holmium (67)	Ho-154m	1.17E+05	5.90E-06	1.49E+10	1.15E+11	1.13E-03	1.40E-03	4.73E+15	1.98E+16
Holmium (67)	Ho-155	7.59E+03	9.13E-05	4.24E+03	1.91E+04	5.48E+01	9.34E+01	1.02E+03	4.27E+03
Holmium (67)	Ho-156	6.50E+03	1.07E-04	2.83E+03	1.20E+04	8.03E+01	2.62E+02	4.32E+02	1.81E+03
Holmium (67)	Ho-157	2.89E+04	2.40E-05	7.27E+04	3.17E+05	1.19E+01	1.54E+01	1.89E+04	7.93E+04
Holmium (67)	Ho-159	1.10E+04	6.29E-05	2.26E+04	1.00E+05	7.27E+01	9.93E+01	3.54E+03	1.49E+04
Holmium (67)	Ho-160	1.42E+04	4.87E-05	1.43E+09	6.02E+09	1.12E+02	4.28E+02	2.03E+08	8.52E+08
Holmium (67)	Ho-161	2.45E+03	2.83E-04	3.96E+04	1.77E+05	2.82E+03	4.96E+03	1.23E+04	5.15E+04
Holmium (67)	Ho-162	2.43E+04	2.85E-05	6.11E+13	2.58E+14	1.23E+03	4.21E+03	1.97E+13	8.27E+13
Holmium (67)	Ho-162m	5.44E+03	1.27E-04	7.79E+03	3.31E+04	2.59E+02	7.86E+02	1.63E+03	6.85E+03
Holmium (67)	Ho-163	1.52E-04	4.57E+03	5.65E+02	4.64E+03	1.55E+02	1.92E+02		
Holmium (67)	Ho-164	1.26E+04	5.52E-05	9.35E+09	4.18E+10	3.09E+03	4.76E+03	5.96E+09	2.50E+10
Holmium (67)	Ho-164m	9.59E+03	7.23E-05	9.94E+04	4.52E+05	1.33E+03	2.05E+03	4.26E+04	1.79E+05
Holmium (67)	Ho-166	2.27E+02	3.06E-03	2.33E+02	1.70E+03	5.13E+01	6.40E+01	2.71E+03	1.14E+04
Holmium (67)	Ho-166m	5.78E-04	1.20E+03	3.52E-01	1.80E+00	1.47E-01	1.83E-01	8.17E-02	3.43E-01
Holmium (67)	Ho-167	1.96E+03	3.54E-04	4.39E+03	1.95E+04	2.58E+02	4.73E+02	1.79E+03	7.52E+03
Holmium (67)	Ho-168	1.22E+05	5.69E-06	2.52E+17	1.06E+18	2.20E+02	9.24E+02	9.32E+16	3.91E+17
Holmium (67)	Ho-168m	1.66E+05	4.19E-06	1.18E+17	4.96E+17	2.19E+02	9.21E+02	4.37E+16	1.84E+17

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Holmium (67)	Ho-170	1.32E+05	5.25E-06	1.36E+17	5.71E+17	1.14E+02	4.79E+02	2.05E+16	8.62E+16
Iodine (53)	I-118	2.66E+04	2.61E-05	9.43E+03	5.74E+04	1.15E+01	1.62E+01	5.25E+04	2.21E+05
Iodine (53)	I-118m	4.29E+04	1.62E-05	1.52E+04	9.25E+04	1.10E+01	1.66E+01	8.47E+04	3.56E+05
Iodine (53)	I-119	1.91E+04	3.63E-05	1.94E+04	8.74E+04	7.15E+01	1.54E+02	7.13E+03	3.00E+04
Iodine (53)	I-120	4.46E+03	1.55E-04	1.49E+03	6.43E+03	4.60E+01	1.06E+02	5.15E+02	2.16E+03
Iodine (53)	I-120m	6.87E+03	1.01E-04	1.77E+03	7.50E+03	4.55E+01	1.36E+02	3.01E+02	1.26E+03
Iodine (53)	I-121	2.86E+03	2.42E-04	2.15E+03	1.00E+04	4.49E+01	6.53E+01	8.15E+02	3.42E+03
Iodine (53)	I-122	1.00E+05	6.91E-06	2.61E+17	1.10E+18	2.03E+02	8.54E+02	3.55E+17	1.49E+18
Iodine (53)	I-123	4.57E+02	1.51E-03	1.45E+03	7.94E+03	1.03E+01	1.28E+01	6.76E+02	2.84E+03
Iodine (53)	I-124	6.06E+01	1.14E-02	6.32E+00	4.81E+01	2.74E+00	3.43E+00	1.82E+01	7.62E+01
Iodine (53)	I-125	4.26E+00	1.63E-01	5.14E-01	3.70E+00	2.64E+00	3.28E+00	3.64E+01	1.53E+02
Iodine (53)	I-126	1.96E+01	3.54E-02	1.05E+00	8.49E+00	1.26E+00	1.57E+00	1.96E+01	8.22E+01
Iodine (53)	I-128	1.46E+04	4.75E-05	1.87E+10	8.43E+10	4.85E+02	6.96E+02	6.23E+10	2.62E+11
Iodine (53)	I-129	4.41E-08	1.57E+07	1.87E-02	1.24E-01	4.04E-01	5.00E-01	2.45E+01	1.03E+02
Iodine (53)	I-130	4.91E+02	1.41E-03	1.40E+02	7.15E+02	1.54E+01	2.16E+01	4.07E+01	1.71E+02
Iodine (53)	I-130m	4.12E+04	1.68E-05	1.39E+04	7.14E+04	1.82E+01	2.57E+01	4.06E+03	1.71E+04
Iodine (53)	I-131	3.15E+01	2.20E-02	2.21E+00	1.83E+01	1.67E+00	2.07E+00	3.48E+01	1.46E+02
Iodine (53)	I-132	2.65E+03	2.62E-04	1.01E+03	4.39E+03	4.87E+01	1.01E+02	2.33E+02	9.77E+02
Iodine (53)	I-132m	4.38E+03	1.58E-04	1.59E+03	7.05E+03	3.83E+01	6.94E+01	4.16E+02	1.75E+03
Iodine (53)	I-133	2.92E+02	2.37E-03	7.97E+01	5.83E+02	7.76E+00	9.79E+00	2.32E+02	9.73E+02
Iodine (53)	I-134	6.94E+03	9.99E-05	2.43E+03	1.03E+04	5.79E+01	1.61E+02	5.06E+02	2.13E+03
Iodine (53)	I-134m	1.01E+05	6.85E-06	3.63E+04	1.54E+05	5.50E+01	1.56E+02	7.56E+03	3.17E+04
Iodine (53)	I-135	9.24E+02	7.50E-04	3.58E+02	1.70E+03	3.09E+00	3.92E+00	2.20E+02	9.25E+02
Indium (49)	In-103	3.64E+05	1.90E-06	3.46E+05	1.55E+06	2.37E+01	5.88E+01	1.07E+05	4.51E+05
Indium (49)	In-105	7.18E+04	9.65E-06	3.32E+04	1.48E+05	2.42E+01	4.49E+01	1.32E+04	5.56E+04
Indium (49)	In-106	5.87E+04	1.18E-05	3.54E+14	1.49E+15	5.48E+01	2.30E+02	6.01E+13	2.52E+14
Indium (49)	In-106m	7.00E+04	9.89E-06	1.07E+15	4.49E+15	6.62E+01	2.78E+02	3.99E+14	1.67E+15
Indium (49)	In-107	1.12E+04	6.16E-05	6.66E+03	2.84E+04	9.18E+01	2.39E+02	1.93E+03	8.11E+03
Indium (49)	In-108	6.28E+03	1.10E-04	1.52E+03	6.39E+03	4.64E+01	1.70E+02	1.86E+02	7.80E+02
Indium (49)	In-108m	9.20E+03	7.53E-05	3.20E+03	1.36E+04	6.19E+01	2.25E+02	1.04E+03	4.38E+03
Indium (49)	In-109	1.45E+03	4.79E-04	1.23E+03	6.34E+03	6.16E+00	7.73E+00	5.32E+02	2.23E+03
Indium (49)	In-109m	2.72E+05	2.55E-06	2.30E+05	1.19E+06	6.04E+00	7.69E+00	9.95E+04	4.18E+05

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Indium (49)	In-110	1.24E+03	5.59E-04	3.64E+02	1.55E+03	5.12E+01	1.47E+02	4.93E+01	2.07E+02
Indium (49)	In-110m	5.27E+03	1.31E-04	2.93E+03	1.25E+04	1.05E+02	3.28E+02	1.30E+03	5.46E+03
Indium (49)	In-111	9.02E+01	7.68E-03	1.55E+02	7.50E+02	1.18E+02	1.74E+02	3.90E+01	1.64E+02
Indium (49)	In-111m	4.73E+04	1.46E-05	8.13E+04	3.93E+05	9.24E+01	1.58E+02	2.04E+04	8.58E+04
Indium (49)	In-112	2.43E+04	2.85E-05	3.59E+13	1.52E+14	6.46E+02	2.03E+03	5.81E+13	2.44E+14
Indium (49)	In-112m	1.77E+04	3.91E-05	1.16E+11	4.93E+11	4.44E+02	1.00E+03	1.82E+11	7.63E+11
Indium (49)	In-113m	3.66E+03	1.89E-04	1.25E+04	5.40E+04	5.44E+02	1.31E+03	8.24E+03	3.46E+04
Indium (49)	In-114	3.04E+05	2.28E-06	5.65E+20	2.37E+21	1.23E+04	5.16E+04	5.15E+22	2.16E+23
Indium (49)	In-114m	5.11E+00	1.36E-01	1.86E+00	1.45E+01	2.90E+00	3.60E+00	4.98E+01	2.09E+02
Indium (49)	In-115	1.57E-15	4.41E+14	6.37E-02	4.09E-01	1.07E-01	1.32E-01		
Indium (49)	In-115m	1.35E+03	5.12E-04	6.07E+03	2.87E+04	1.12E-01	1.39E-01	5.15E+03	2.16E+04
Indium (49)	In-116m	6.69E+03	1.04E-04	2.59E+03	1.10E+04	6.89E+01	2.39E+02	7.55E+02	3.17E+03
Indium (49)	In-117	8.43E+03	8.22E-05	1.10E+04	4.68E+04	2.22E+02	5.96E+02	2.98E+03	1.25E+04
Indium (49)	In-117m	3.13E+03	2.21E-04	5.45E+03	2.46E+04	2.16E+02	3.92E+02	2.09E+03	8.80E+03
Indium (49)	In-118	4.37E+06	1.59E-07	1.51E+27	6.36E+27	1.56E+03	6.56E+03	1.42E+28	5.97E+28
Indium (49)	In-118m	8.35E+04	8.30E-06	4.88E+15	2.05E+16	6.82E+01	2.86E+02	1.12E+15	4.70E+15
Indium (49)	In-119	1.52E+05	4.57E-06	1.22E+08	9.54E+08	2.09E+02	6.22E+02	1.82E+09	7.62E+09
Indium (49)	In-119m	2.02E+04	3.42E-05	2.91E+08	2.27E+09	8.29E+02	1.67E+03	4.32E+09	1.81E+10
Indium (49)	In-121	9.46E+05	7.32E-07	7.57E+06	6.16E+07	1.90E+01	2.52E+01	2.79E+11	1.17E+12
Indium (49)	In-121m	9.39E+04	7.38E-06	6.68E+05	5.44E+06	1.33E+02	1.73E+02	2.30E+12	9.68E+12
Iridium (77)	Ir-180	2.43E+05	2.85E-06	4.60E+11	1.94E+12	6.61E+01	2.61E+02	7.67E+10	3.22E+11
Iridium (77)	Ir-182	2.43E+04	2.85E-05	1.10E+04	5.15E+04	3.05E+01	5.66E+01	1.99E+03	8.38E+03
Iridium (77)	Ir-183	6.28E+03	1.10E-04	2.03E+03	9.57E+03	9.27E+00	1.24E+01	4.15E+02	1.74E+03
Iridium (77)	Ir-184	1.96E+03	3.53E-04	9.05E+02	3.89E+03	7.41E+01	1.94E+02	1.06E+02	4.47E+02
Iridium (77)	Ir-185	4.22E+02	1.64E-03	2.11E+02	9.87E+02	1.86E+01	2.57E+01	4.51E+01	1.89E+02
Iridium (77)	Ir-186	3.65E+02	1.90E-03	1.79E+02	8.10E+02	9.67E-03	1.20E-02	2.45E+01	1.03E+02
Iridium (77)	Ir-186m	3.16E+03	2.19E-04	1.72E+03	7.44E+03	9.67E-03	1.20E-02	3.05E+02	1.28E+03
Iridium (77)	Ir-187	5.78E+02	1.20E-03	1.41E+03	6.40E+03	2.74E+02	4.86E+02	3.27E+02	1.37E+03
Iridium (77)	Ir-188	1.46E+02	4.74E-03	5.83E+01	2.64E+02	4.10E+01	7.54E+01	1.09E+01	4.57E+01
Iridium (77)	Ir-189	1.92E+01	3.62E-02	8.67E+01	5.28E+02	6.82E+01	8.58E+01	6.30E+01	2.65E+02
Iridium (77)	Ir-190	2.15E+01	3.23E-02	9.89E+00	4.73E+01	2.32E+01	3.27E+01	1.52E+00	6.39E+00
Iridium (77)	Ir-190m	5.42E+03	1.28E-04	2.49E+03	1.19E+04	2.31E+01	3.25E+01	3.84E+02	1.61E+03

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Iridium (77)	Ir-190n	1.97E+03	3.52E-04	1.06E+03	4.58E+03	7.47E+01	1.60E+02	1.41E+02	5.92E+02
Iridium (77)	Ir-191m	4.42E+06	1.57E-07	6.25E+27	2.63E+28	3.36E+03	1.41E+04	1.60E+27	6.74E+27
Iridium (77)	Ir-192	3.43E+00	2.02E-01	2.12E+00	1.14E+01	5.84E+00	7.35E+00	9.36E-01	3.93E+00
Iridium (77)	Ir-192m	2.51E+05	2.76E-06	1.55E+05	8.39E+05	5.84E+00	7.35E+00	6.86E+04	2.88E+05
Iridium (77)	Ir-192n	2.88E-03	2.41E+02	4.53E-01	2.66E+00	6.35E-01	7.89E-01	2.66E-01	1.12E+00
Iridium (77)	Ir-193m	2.40E+01	2.88E-02	1.35E+02	1.10E+03	3.23E+01	4.00E+01	7.22E+04	3.03E+05
Iridium (77)	Ir-194	3.15E+02	2.20E-03	3.10E+02	2.13E+03	6.25E+01	7.93E+01	3.98E+03	1.67E+04
Iridium (77)	Ir-194m	1.48E+00	4.68E-01	5.25E-01	2.57E+00	3.16E+00	4.02E+00	8.64E-02	3.63E-01
Iridium (77)	Ir-195	2.43E+03	2.85E-04	1.69E+04	8.91E+04	4.64E+02	6.26E+02	9.47E+03	3.98E+04
Iridium (77)	Ir-195m	1.60E+03	4.34E-04	2.31E+03	1.18E+04	5.45E+01	7.30E+01	9.26E+02	3.89E+03
Iridium (77)	Ir-196	4.20E+05	1.65E-06	7.64E+20	3.21E+21	7.70E+02	3.23E+03	9.91E+20	4.16E+21
Iridium (77)	Ir-196m	4.34E+03	1.60E-04	1.60E+03	6.80E+03	6.76E+01	2.03E+02	1.66E+02	6.96E+02
Potassium (19)	K-38	4.77E+04	1.45E-05	1.56E+14	6.55E+14	5.73E+01	2.40E+02	1.00E+14	4.21E+14
Potassium (19)	K-40	5.54E-10	1.25E+09	2.59E-01	1.94E+00	4.92E-01	6.09E-01	2.42E+01	1.02E+02
Potassium (19)	K-42	4.91E+02	1.41E-03	6.93E+02	3.52E+03	9.07E+01	1.26E+02	3.74E+03	1.57E+04
Potassium (19)	K-43	2.72E+02	2.55E-03	2.29E+02	1.02E+03	6.78E+01	1.09E+02	8.09E+01	3.40E+02
Potassium (19)	K-44	1.65E+04	4.21E-05	1.21E+10	5.12E+10	7.02E+01	2.56E+02	5.12E+09	2.15E+10
Potassium (19)	K-45	2.11E+04	3.29E-05	5.80E+04	5.03E+05	9.79E+00	1.30E+01	2.47E+11	1.04E+12
Potassium (19)	K-46	2.08E+05	3.33E-06	1.57E+18	6.58E+18	6.08E+01	2.55E+02	6.58E+17	2.76E+18
Krypton (36)	Kr-74	3.17E+04	2.19E-05	7.54E+08	3.18E+09	3.11E+01	1.21E+02	2.10E+08	8.84E+08
Krypton (36)	Kr-75	8.49E+04	8.16E-06	2.79E+04	1.47E+05	2.02E+01	3.16E+01	1.44E+04	6.06E+04
Krypton (36)	Kr-76	4.10E+02	1.69E-03	1.14E+02	4.95E+02	3.48E+01	7.42E+01	3.17E+01	1.33E+02
Krypton (36)	Kr-77	4.90E+03	1.42E-04	3.10E+03	1.32E+04	1.09E+02	2.79E+02	9.62E+02	4.04E+03
Krypton (36)	Kr-79	1.73E+02	4.00E-03	6.52E+02	2.74E+03	8.05E+02	3.38E+03	2.72E+02	1.14E+03
Krypton (36)	Kr-81	3.03E-06	2.29E+05	5.68E+02	2.39E+03	2.34E+05	9.82E+05	3.36E+02	1.41E+03
Krypton (36)	Kr-81m	1.67E+06	4.15E-07	3.13E+14	1.32E+15	1.59E+03	6.69E+03	1.85E+14	7.78E+14
Krypton (36)	Kr-83m	3.32E+03	2.09E-04	9.08E+06	3.81E+07	8.12E+06	3.41E+07	1.20E+07	5.05E+07
Krypton (36)	Kr-85	6.44E-02	1.08E+01	8.77E+01	3.68E+02	3.71E+04	1.56E+05	1.27E+04	5.35E+04
Krypton (36)	Kr-85m	1.36E+03	5.11E-04	7.74E+03	3.25E+04	1.29E+03	5.44E+03	3.57E+03	1.50E+04
Krypton (36)	Kr-87	4.77E+03	1.45E-04	5.08E+03	2.13E+04	2.57E+00	3.21E+00	3.84E+03	1.61E+04
Krypton (36)	Kr-88	2.14E+03	3.24E-04	7.58E+02	3.21E+03	6.49E+01	2.44E+02	3.96E+02	1.66E+03
Krypton (36)	Kr-89	1.16E+05	5.99E-06	6.95E+04	5.52E+05	4.43E+00	5.91E+00	9.65E+09	4.05E+10

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Lanthanum (57)	La-128	7.03E+04	9.86E-06	2.60E+04	1.48E+05	1.75E+01	2.85E+01	5.41E+04	2.27E+05
Lanthanum (57)	La-129	3.14E+04	2.21E-05	3.86E+04	1.68E+05	8.87E+01	2.19E+02	1.21E+04	5.07E+04
Lanthanum (57)	La-130	4.19E+04	1.66E-05	8.13E+13	3.41E+14	8.67E+01	3.64E+02	1.98E+13	8.32E+13
Lanthanum (57)	La-131	6.17E+03	1.12E-04	3.96E+03	1.83E+04	3.42E+01	4.88E+01	1.16E+03	4.87E+03
Lanthanum (57)	La-132	1.26E+03	5.48E-04	5.36E+02	2.36E+03	6.46E+01	1.53E+02	1.52E+02	6.38E+02
Lanthanum (57)	La-132m	1.50E+04	4.62E-05	8.37E+03	3.69E+04	6.39E+01	1.61E+02	2.37E+03	9.94E+03
Lanthanum (57)	La-133	1.55E+03	4.47E-04	5.48E+03	2.75E+04	3.85E+00	4.80E+00	2.90E+03	1.22E+04
Lanthanum (57)	La-134	5.65E+04	1.23E-05	9.98E+14	4.19E+15	2.74E+02	1.15E+03	1.23E+15	5.19E+15
Lanthanum (57)	La-135	3.11E+02	2.23E-03	5.94E+03	2.98E+04	1.97E+03	2.77E+03	4.79E+03	2.01E+04
Lanthanum (57)	La-136	3.69E+04	1.88E-05	1.57E+14	6.61E+14	4.99E+02	2.10E+03	1.25E+14	5.23E+14
Lanthanum (57)	La-137	1.16E-05	6.00E+04	1.40E+01	8.58E+01	4.63E+00	5.73E+00	2.45E+01	1.03E+02
Lanthanum (57)	La-138	6.79E-12	1.02E+11	5.37E-01	2.63E+00	2.69E-01	3.33E-01	3.13E-01	1.31E+00
Lanthanum (57)	La-140	1.51E+02	4.60E-03	4.20E+01	2.08E+02	2.31E+01	3.58E+01	1.80E+01	7.58E+01
Lanthanum (57)	La-141	1.55E+03	4.47E-04	1.73E+03	1.13E+04	1.01E+01	1.25E+01	1.22E+04	5.11E+04
Lanthanum (57)	La-142	4.00E+03	1.73E-04	1.58E+03	6.78E+03	6.34E+01	1.94E+02	6.86E+02	2.88E+03
Lanthanum (57)	La-143	2.57E+04	2.70E-05	1.45E+04	9.92E+04	1.14E+01	1.44E+01	2.48E+04	1.04E+05
Lutetium (71)	Lu-165	3.39E+04	2.04E-05	4.00E+04	1.90E+05	5.94E+01	1.26E+02	9.18E+03	3.86E+04
Lutetium (71)	Lu-167	7.07E+03	9.80E-05	2.82E+03	1.27E+04	2.20E+01	3.26E+01	4.70E+02	1.98E+03
Lutetium (71)	Lu-169	1.78E+02	3.89E-03	7.24E+01	3.56E+02	9.42E+00	1.23E+01	1.45E+01	6.10E+01
Lutetium (71)	Lu-169m	1.37E+05	5.07E-06	5.55E+04	2.73E+05	9.42E+00	1.23E+01	1.11E+04	4.67E+04
Lutetium (71)	Lu-170	1.26E+02	5.51E-03	4.09E+01	1.86E+02	3.19E+01	5.77E+01	8.34E+00	3.50E+01
Lutetium (71)	Lu-171	3.07E+01	2.26E-02	2.84E+01	1.44E+02	3.50E+01	4.70E+01	6.55E+00	2.75E+01
Lutetium (71)	Lu-171m	2.77E+05	2.51E-06	2.56E+05	1.30E+06	3.50E+01	4.70E+01	5.90E+04	2.48E+05
Lutetium (71)	Lu-172	3.78E+01	1.84E-02	1.35E+01	6.45E+01	1.95E+01	2.80E+01	2.23E+00	9.37E+00
Lutetium (71)	Lu-172m	9.84E+04	7.04E-06	3.53E+04	1.68E+05	1.95E+01	2.80E+01	5.82E+03	2.44E+04
Lutetium (71)	Lu-173	5.06E-01	1.37E+00	3.19E+00	1.79E+01	1.10E+01	1.37E+01	1.14E+00	4.79E+00
Lutetium (71)	Lu-174	2.09E-01	3.31E+00	3.89E+00	2.27E+01	8.79E+00	1.09E+01	2.94E+00	1.23E+01
Lutetium (71)	Lu-174m	1.78E+00	3.89E-01	5.05E+00	3.53E+01	4.45E+00	5.53E+00	7.42E+00	3.12E+01
Lutetium (71)	Lu-176	1.80E-11	3.85E+10	6.36E-01	3.93E+00	2.71E-01	3.36E-01	3.67E-01	1.54E+00
Lutetium (71)	Lu-176m	1.67E+03	4.15E-04	1.02E+04	6.11E+04	3.21E+02	4.06E+02	3.00E+04	1.26E+05
Lutetium (71)	Lu-177	3.81E+01	1.82E-02	1.06E+02	7.86E+02	3.29E+01	4.09E+01	1.61E+03	6.76E+03
Lutetium (71)	Lu-177m	1.58E+00	4.39E-01	9.37E-01	5.15E+00	2.41E+00	3.01E+00	1.52E-01	6.40E-01

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Lutetium (71)	Lu-178	1.28E+04	5.40E-05	2.16E+09	9.57E+09	7.16E+02	1.39E+03	3.50E+09	1.47E+10
Lutetium (71)	Lu-178m	1.58E+04	4.39E-05	1.22E+10	5.16E+10	1.69E+02	5.28E+02	1.25E+09	5.26E+09
Lutetium (71)	Lu-179	1.32E+03	5.24E-04	6.00E+03	3.54E+04	3.16E+02	4.08E+02	4.86E+04	2.04E+05
Lutetium (71)	Lu-180	6.39E+04	1.08E-05	5.04E+15	2.12E+16	1.26E+02	5.29E+02	1.12E+15	4.72E+15
Lutetium (71)	Lu-181	1.04E+05	6.66E-06	8.51E+04	4.81E+05	6.45E+00	8.20E+00	4.49E+04	1.89E+05
Magnesium (12)	Mg-27	3.85E+04	1.80E-05	1.99E+14	8.37E+14	2.15E+02	9.02E+02	1.23E+14	5.17E+14
Magnesium (12)	Mg-28	2.90E+02	2.39E-03	6.34E+01	3.04E+02	1.94E+01	3.14E+01	3.63E+01	1.52E+02
Manganese (25)	Mn-50m	2.08E+05	3.33E-06	9.32E+17	3.91E+18	4.10E+01	1.72E+02	1.75E+17	7.37E+17
Manganese (25)	Mn-51	7.88E+03	8.79E-05	6.02E+03	2.60E+04	1.35E+02	3.33E+02	1.56E+05	6.57E+05
Manganese (25)	Mn-52	4.52E+01	1.53E-02	9.84E+00	4.56E+01	1.78E+01	2.85E+01	2.45E+00	1.03E+01
Manganese (25)	Mn-52m	1.73E+04	4.01E-05	2.14E+05	9.92E+05	6.92E+01	2.34E+02	5.33E+04	2.24E+05
Manganese (25)	Mn-53	1.87E-07	3.70E+06	5.46E+01	4.48E+02	1.20E+02	1.48E+02		
Manganese (25)	Mn-54	8.10E-01	8.55E-01	1.14E+00	5.52E+00	1.15E+01	1.48E+01	7.77E-01	3.26E+00
Manganese (25)	Mn-56	2.35E+03	2.94E-04	1.20E+03	5.21E+03	7.89E+01	1.99E+02	5.79E+02	2.43E+03
Manganese (25)	Mn-57	2.56E+05	2.71E-06	1.34E+20	5.65E+20	1.69E+03	7.08E+03	8.91E+19	3.74E+20
Manganese (25)	Mn-58m	3.35E+05	2.07E-06	2.64E+19	1.11E+20	7.77E+01	3.26E+02	7.43E+18	3.12E+19
Molybdenum (42)	Mo-101	2.49E+04	2.78E-05	1.04E+12	4.41E+12	9.48E+01	3.22E+02	5.47E+11	2.30E+12
Molybdenum (42)	Mo-102	3.22E+04	2.15E-05	2.27E+14	1.00E+15	6.86E+02	1.35E+03	1.32E+15	5.54E+15
Molybdenum (42)	Mo-89	1.73E+05	4.01E-06	5.09E+04	2.33E+05	2.65E+01	5.18E+01	3.63E+04	1.53E+05
Molybdenum (42)	Mo-90	1.09E+03	6.35E-04	1.83E+02	8.22E+02	1.82E+01	3.44E+01	3.56E+01	1.50E+02
Molybdenum (42)	Mo-91	2.35E+04	2.95E-05	1.84E+08	1.36E+09	1.97E+01	2.62E+01	1.16E+09	4.87E+09
Molybdenum (42)	Mo-91m	3.38E+05	2.05E-06	2.46E+06	1.82E+07	9.36E+00	1.24E+01	1.88E+07	7.92E+07
Molybdenum (42)	Mo-93	1.73E-04	4.00E+03	6.97E-01	4.48E+00	1.04E+01	1.29E+01	1.62E+02	6.79E+02
Molybdenum (42)	Mo-93m	8.86E+02	7.82E-04	3.61E+02	1.53E+03	8.83E+00	1.18E+01	7.94E+01	3.34E+02
Molybdenum (42)	Mo-99	9.21E+01	7.53E-03	1.39E+02	7.63E+02	2.83E+00	3.52E+00	2.46E+02	1.03E+03
Nitrogen (7)	N-13	3.66E+04	1.90E-05	6.26E+13	2.63E+14	1.95E+02	8.21E+02		
Nitrogen (7)	N-16	3.07E+06	2.26E-07	3.29E+25	1.38E+26	3.45E+01	1.45E+02	3.00E+25	1.26E+26
Sodium (11)	Na-22	2.66E-01	2.60E+00	2.84E-01	1.45E+00	1.36E+00	1.71E+00	3.12E-01	1.31E+00
Sodium (11)	Na-24	4.06E+02	1.71E-03	9.52E+01	4.10E+02	2.73E+01	6.12E+01	3.23E+01	1.36E+02
Niobium (41)	Nb-87	9.71E+04	7.13E-06	3.48E+04	1.61E+05	2.89E+01	5.34E+01	3.38E+04	1.42E+05
Niobium (41)	Nb-88	2.51E+04	2.76E-05	7.95E+03	3.72E+04	3.47E+00	4.74E+00	2.39E+03	1.00E+04
Niobium (41)	Nb-88m	4.68E+04	1.48E-05	1.48E+04	6.93E+04	3.48E+00	4.76E+00	4.45E+03	1.87E+04

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Niobium (41)	Nb-89	2.99E+03	2.32E-04	8.82E+02	4.04E+03	3.19E+01	5.62E+01	6.30E+02	2.65E+03
Niobium (41)	Nb-89m	5.52E+03	1.26E-04	1.44E+03	6.42E+03	3.21E+01	6.09E+01	8.05E+02	3.38E+03
Niobium (41)	Nb-90	4.16E+02	1.67E-03	8.39E+01	3.77E+02	2.43E+01	4.96E+01	1.62E+01	6.81E+01
Niobium (41)	Nb-91	1.02E-03	6.80E+02	3.05E+01	2.20E+02	2.21E+01	2.74E+01	1.28E+02	5.36E+02
Niobium (41)	Nb-91m	4.16E+00	1.67E-01	1.51E+01	1.12E+02	6.73E+00	8.35E+00	1.16E+02	4.86E+02
Niobium (41)	Nb-92	2.00E-08	3.47E+07	4.64E-01	2.20E+00	1.52E+00	1.90E+00	1.37E-01	5.76E-01
Niobium (41)	Nb-92m	2.49E+01	2.78E-02	1.93E+01	8.95E+01	5.93E+01	9.27E+01	7.94E+00	3.33E+01
Niobium (41)	Nb-93m	4.30E-02	1.61E+01	1.28E+01	1.04E+02	2.09E+01	2.59E+01	4.59E+03	1.93E+04
Niobium (41)	Nb-94	3.41E-05	2.03E+04	3.78E-01	1.91E+00	8.48E-01	1.06E+00	1.94E-01	8.14E-01
Niobium (41)	Nb-94m	5.82E+04	1.19E-05	6.47E+08	3.26E+09	8.52E-01	1.06E+00	3.32E+08	1.39E+09
Niobium (41)	Nb-95	7.23E+00	9.59E-02	6.32E+00	3.04E+01	2.08E+01	2.73E+01	5.74E+00	2.41E+01
Niobium (41)	Nb-95m	7.01E+01	9.89E-03	4.61E+01	2.45E+02	1.46E+01	1.88E+01	5.43E+01	2.28E+02
Niobium (41)	Nb-96	2.60E+02	2.67E-03	8.03E+01	3.69E+02	3.26E+01	5.70E+01	1.97E+01	8.27E+01
Niobium (41)	Nb-97	5.05E+03	1.37E-04	6.28E+03	2.70E+04	2.16E+02	5.57E+02	4.27E+03	1.79E+04
Niobium (41)	Nb-98m	7.10E+03	9.76E-05	2.29E+03	9.71E+03	6.10E+01	2.07E+02	4.74E+02	1.99E+03
Niobium (41)	Nb-99	1.46E+06	4.76E-07	2.20E+06	1.21E+07	2.82E+00	3.51E+00	3.90E+06	1.64E+07
Niobium (41)	Nb-99m	1.40E+05	4.95E-06	2.11E+05	1.16E+06	2.80E+00	3.50E+00	3.75E+05	1.57E+06
Neodymium (60)	Nd-134	4.29E+04	1.62E-05	1.72E+04	1.04E+05	1.71E+01	2.72E+01	5.71E+04	2.40E+05
Neodymium (60)	Nd-135	2.94E+04	2.36E-05	2.75E+04	1.24E+05	4.91E+01	1.25E+02	6.61E+03	2.78E+04
Neodymium (60)	Nd-136	7.19E+03	9.64E-05	2.66E+03	1.13E+04	7.03E+01	2.25E+02	6.94E+02	2.91E+03
Neodymium (60)	Nd-137	9.46E+03	7.32E-05	5.29E+03	2.26E+04	4.43E+00	5.63E+00	1.42E+03	5.97E+03
Neodymium (60)	Nd-138	1.20E+03	5.75E-04	8.38E+02	4.04E+03	8.89E+01	1.51E+02	1.83E+03	7.70E+03
Neodymium (60)	Nd-139	1.23E+04	5.65E-05	2.90E+04	1.46E+05	1.88E+01	2.44E+01	1.57E+04	6.60E+04
Neodymium (60)	Nd-139m	1.10E+03	6.28E-04	4.84E+02	2.16E+03	1.58E+01	2.20E+01	9.38E+01	3.94E+02
Neodymium (60)	Nd-140	7.51E+01	9.23E-03	3.99E+01	2.41E+02	3.01E+01	3.96E+01	1.08E+02	4.53E+02
Neodymium (60)	Nd-141	2.44E+03	2.84E-04	2.95E+04	1.27E+05	2.26E+03	5.31E+03	1.56E+04	6.56E+04
Neodymium (60)	Nd-141m	3.52E+05	1.97E-06	4.23E+06	1.83E+07	2.51E+02	9.70E+02	2.24E+06	9.42E+06
Neodymium (60)	Nd-144	3.03E-16	2.29E+15	4.28E-02	3.28E-01	2.17E-03	2.69E-03		
Neodymium (60)	Nd-147	2.30E+01	3.01E-02	2.72E+01	1.88E+02	1.79E-03	2.21E-03	6.42E+01	2.70E+02
Neodymium (60)	Nd-149	3.51E+03	1.97E-04	3.01E+03	1.76E+04	4.25E+01	5.58E+01	2.31E+03	9.72E+03
Neodymium (60)	Nd-151	2.93E+04	2.37E-05	3.61E+04	2.05E+05	4.09E+00	5.15E+00	2.90E+04	1.22E+05
Neodymium (60)	Nd-152	3.20E+04	2.17E-05	1.42E+14	6.07E+14	3.25E+02	9.10E+02	1.22E+14	5.14E+14

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Neon (10)	Ne-19	1.27E+06	5.46E-07	9.99E+23	4.20E+24	1.93E+02	8.10E+02	2.73E+27	1.15E+28
Neon (10)	Ne-24	1.08E+05	6.43E-06	2.52E+04	1.08E+05	2.54E+01	5.89E+01	8.55E+03	3.59E+04
Nickel (28)	Ni-56	4.16E+01	1.66E-02	5.74E+00	2.75E+01	4.33E+00	5.87E+00	1.46E+00	6.12E+00
Nickel (28)	Ni-57	1.71E+02	4.06E-03	6.39E+01	2.99E+02	1.94E+01	2.82E+01	3.23E+01	1.36E+02
Nickel (28)	Ni-59	6.86E-06	1.01E+05	2.84E+01	2.14E+02	4.78E+01	5.92E+01	6.26E+04	2.63E+05
Nickel (28)	Ni-63	6.92E-03	1.00E+02	1.15E+01	8.65E+01	1.96E+01	2.42E+01		
Nickel (28)	Ni-65	2.41E+03	2.87E-04	3.19E+03	1.44E+04	8.11E+01	1.22E+02	5.14E+03	2.16E+04
Nickel (28)	Ni-66	1.11E+02	6.23E-03	5.35E+01	3.91E+02	2.01E+01	2.52E+01		
Neptunium (93)	Np-232	2.48E+04	2.80E-05	9.26E+03	7.47E+04	5.06E-04	6.27E-04	5.41E+05	2.27E+06
Neptunium (93)	Np-233	1.01E+04	6.89E-05	6.31E+06	5.19E+07	4.22E-04	5.23E-04	3.60E+04	1.51E+05
Neptunium (93)	Np-234	5.75E+01	1.21E-02	3.87E+01	1.83E+02	3.22E-04	4.00E-04	1.08E+01	4.54E+01
Neptunium (93)	Np-235	6.39E-01	1.09E+00	3.59E+01	2.81E+02	1.34E-04	1.66E-04	4.21E+02	1.77E+03
Neptunium (93)	Np-236	4.50E-06	1.54E+05	1.82E-02	1.38E-01	3.95E-04	4.89E-04	6.02E-01	2.53E+00
Neptunium (93)	Np-236m	2.70E+02	2.57E-03	5.11E+01	3.72E+02	4.43E-04	5.49E-04	3.01E+03	1.27E+04
Neptunium (93)	Np-237	3.23E-07	2.14E+06	2.56E-03	2.06E-02	3.76E-04	4.66E-04	6.70E-01	2.82E+00
Neptunium (93)	Np-238	1.19E+02	5.80E-03	5.77E+01	3.41E+02	1.78E-04	2.20E-04	9.17E+01	3.85E+02
Neptunium (93)	Np-239	1.07E+02	6.46E-03	1.59E+02	1.03E+03	9.77E-05	1.21E-04	1.26E+02	5.28E+02
Neptunium (93)	Np-240	5.88E+03	1.18E-04	5.00E+03	2.15E+04	1.98E-04	2.45E-04	8.26E+02	3.47E+03
Neptunium (93)	Np-240m	5.04E+04	1.37E-05	3.74E+06	2.53E+07	1.98E-04	2.45E-04	2.05E+08	8.62E+08
Neptunium (93)	Np-241	2.62E+04	2.64E-05	1.68E+05	1.16E+06	2.02E-04	2.50E-04	3.06E+08	1.28E+09
Neptunium (93)	Np-242	1.66E+05	4.19E-06	7.39E+08	5.01E+09	1.68E-04	2.09E-04	2.59E+14	1.09E+15
Neptunium (93)	Np-242m	6.62E+04	1.05E-05	2.96E+08	2.00E+09	1.68E-04	2.09E-04	1.03E+14	4.35E+14
Oxygen (8)	O-14	3.10E+05	2.24E-06	3.97E+19	1.67E+20	5.48E+01	2.30E+02	2.57E+19	1.08E+20
Oxygen (8)	O-15	1.79E+05	3.88E-06	1.00E+18	4.21E+18	1.94E+02	8.15E+02		
Oxygen (8)	O-19	8.26E+05	8.39E-07	2.18E+22	9.15E+22	1.94E+02	8.15E+02	7.35E+21	3.09E+22
Osmium (76)	Os-180	1.69E+04	4.09E-05	3.45E+10	1.45E+11	1.42E+02	5.26E+02	5.75E+09	2.42E+10
Osmium (76)	Os-181	3.47E+03	2.00E-04	1.31E+03	5.87E+03	3.64E+01	6.30E+01	1.95E+02	8.19E+02
Osmium (76)	Os-182	2.75E+02	2.52E-03	1.25E+02	5.83E+02	4.01E+01	6.50E+01	2.26E+01	9.48E+01
Osmium (76)	Os-183	4.67E+02	1.48E-03	3.12E+02	1.68E+03	1.01E+01	1.29E+01	7.34E+01	3.08E+02
Osmium (76)	Os-183m	6.13E+02	1.13E-03	3.08E+02	1.55E+03	9.87E+00	1.28E+01	9.40E+01	3.95E+02
Osmium (76)	Os-185	2.70E+00	2.56E-01	2.86E+00	1.37E+01	2.32E+01	3.05E+01	9.01E-01	3.79E+00
Osmium (76)	Os-186	3.47E-16	2.00E+15	5.27E-02	4.18E-01	9.67E-03	1.20E-02		

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Osmium (76)	Os-189m	1.05E+03	6.62E-04	9.98E+04	8.11E+05	6.79E+03	8.42E+03	2.58E+07	1.08E+08
Osmium (76)	Os-190m	3.68E+04	1.88E-05	4.20E+13	1.76E+14	1.27E+02	5.33E+02	5.17E+12	2.17E+13
Osmium (76)	Os-191	1.64E+01	4.22E-02	3.81E+01	2.63E+02	1.96E+01	2.44E+01	5.01E+01	2.11E+02
Osmium (76)	Os-191m	4.63E+02	1.50E-03	9.33E+02	6.50E+03	1.81E+01	2.25E+01	1.39E+03	5.82E+03
Osmium (76)	Os-193	2.02E+02	3.44E-03	3.33E+02	2.35E+03	6.70E+01	8.43E+01	1.76E+03	7.39E+03
Osmium (76)	Os-194	1.16E-01	6.00E+00	4.20E-01	3.17E+00	4.76E-01	5.90E-01	1.30E+01	5.47E+01
Osmium (76)	Os-196	1.04E+04	6.64E-05	1.82E+04	8.08E+04	3.10E+02	6.12E+02	2.47E+04	1.04E+05
Phosphorus (15)	P-30	1.46E+05	4.75E-06	2.71E+17	1.14E+18	1.90E+02	8.00E+02	2.26E+20	9.51E+20
Phosphorus (15)	P-32	1.77E+01	3.91E-02	1.12E+01	8.87E+01	9.95E+00	1.23E+01		
Phosphorus (15)	P-33	9.98E+00	6.94E-02	6.69E+01	5.44E+02	2.23E+01	2.76E+01		
Protactinium (91)	Pa-227	9.51E+03	7.29E-05	5.99E+02	7.06E+03	1.37E-02	1.70E-02	4.88E+04	2.05E+05
Protactinium (91)	Pa-228	2.76E+02	2.51E-03	7.56E+00	7.33E+01	9.39E-04	1.16E-03	2.06E+01	8.65E+01
Protactinium (91)	Pa-229	1.69E+02	4.11E-03	6.47E+02	4.27E+03	4.70E-04	5.83E-04	9.11E+02	3.82E+03
Protactinium (91)	Pa-230	1.45E+01	4.77E-02	2.53E+00	1.84E+01	3.70E-04	4.59E-04	4.21E+00	1.77E+01
Protactinium (91)	Pa-231	2.12E-05	3.28E+04	1.92E-03	1.47E-02	1.38E-04	1.71E-04	9.70E-01	4.07E+00
Protactinium (91)	Pa-232	1.93E+02	3.59E-03	5.79E+01	3.50E+02	5.06E-04	6.27E-04	4.95E+01	2.08E+02
Protactinium (91)	Pa-233	9.38E+00	7.39E-02	1.16E+01	7.43E+01	4.22E-04	5.23E-04	1.08E+01	4.55E+01
Protactinium (91)	Pa-234	9.06E+02	7.65E-04	5.05E+02	2.27E+03	3.22E-04	4.00E-04	7.34E+01	3.08E+02
Protactinium (91)	Pa-234m	3.11E+05	2.23E-06	1.05E+08	4.73E+08	3.22E-04	4.00E-04	1.56E+07	6.54E+07
Protactinium (91)	Pa-235	1.49E+04	4.66E-05	2.75E+10	2.10E+11	1.34E-04	1.66E-04	2.78E+11	1.17E+12
Protactinium (91)	Pa-236	4.00E+04	1.73E-05	5.59E+10	3.88E+11	4.39E-04	5.44E-04	1.01E+14	4.23E+14
Protactinium (91)	Pa-237	4.19E+04	1.66E-05	6.89E+04	4.60E+05	3.76E-04	4.66E-04	5.94E+04	2.50E+05
Lead (82)	Pb-194	3.04E+04	2.28E-05	2.85E+04	1.21E+05	1.70E+00	2.15E+00	7.63E+03	3.21E+04
Lead (82)	Pb-195m	2.43E+04	2.85E-05	1.43E+04	6.34E+04	9.89E+00	1.38E+01	2.77E+03	1.16E+04
Lead (82)	Pb-196	9.84E+03	7.04E-05	3.96E+03	1.68E+04	7.16E+01	2.31E+02	6.82E+02	2.86E+03
Lead (82)	Pb-197	4.55E+04	1.52E-05	6.46E+04	3.05E+05	7.84E+00	1.03E+01	1.74E+04	7.31E+04
Lead (82)	Pb-197m	8.47E+03	8.18E-05	3.75E+03	1.64E+04	7.80E+00	1.02E+01	6.02E+02	2.53E+03
Lead (82)	Pb-198	2.53E+03	2.74E-04	9.82E+02	4.18E+03	6.04E+01	1.63E+02	1.59E+02	6.69E+02
Lead (82)	Pb-199	4.05E+03	1.71E-04	2.97E+03	1.26E+04	1.15E+02	3.03E+02	5.93E+02	2.49E+03
Lead (82)	Pb-200	2.82E+02	2.45E-03	1.49E+02	6.74E+02	4.59E+01	7.54E+01	2.92E+01	1.22E+02
Lead (82)	Pb-201	6.51E+02	1.07E-03	6.36E+02	2.84E+03	8.06E+01	1.30E+02	1.28E+02	5.39E+02
Lead (82)	Pb-201m	3.58E+05	1.93E-06	3.50E+05	1.56E+06	7.03E+01	1.23E+02	7.06E+04	2.96E+05

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Lead (82)	Pb-202	1.32E-05	5.25E+04	1.00E-01	7.59E-01	8.16E-01	1.01E+00	4.43E-01	1.86E+00
Lead (82)	Pb-202m	1.72E+03	4.03E-04	7.58E+02	3.25E+03	8.90E-01	1.11E+00	1.39E+02	5.84E+02
Lead (82)	Pb-203	1.17E+02	5.92E-03	2.56E+02	1.23E+03	1.35E+02	1.95E+02	7.04E+01	2.96E+02
Lead (82)	Pb-204m	5.42E+03	1.28E-04	2.44E+03	1.03E+04	8.78E+01	3.15E+02	4.91E+02	2.06E+03
Lead (82)	Pb-205	4.53E-08	1.53E+07	6.41E+00	4.92E+01	4.91E+01	6.09E+01	5.12E+03	2.15E+04
Lead (82)	Pb-209	1.87E+03	3.71E-04	5.15E+04	3.73E+05	6.21E+02	7.73E+02		
Lead (82)	Pb-210	3.12E-02	2.22E+01	8.76E-04	7.53E-03	4.02E-03	4.98E-03	3.99E+02	1.68E+03
Lead (82)	Pb-211	1.01E+04	6.87E-05	2.89E+04	1.46E+05	3.20E+00	3.97E+00	2.34E+05	9.84E+05
Lead (82)	Pb-212	5.71E+02	1.21E-03	9.17E+01	6.89E+02	3.58E-01	4.44E-01	1.13E+02	4.76E+02
Lead (82)	Pb-214	1.36E+04	5.10E-05	3.81E+02	3.28E+03	4.01E-03	4.97E-03	5.99E+07	2.52E+08
Palladium (46)	Pd-100	6.97E+01	9.95E-03	1.85E+01	8.68E+01	2.16E+01	3.49E+01	4.73E+00	1.99E+01
Palladium (46)	Pd-101	7.17E+02	9.67E-04	8.56E+02	3.98E+03	5.35E+01	7.50E+01	3.28E+02	1.38E+03
Palladium (46)	Pd-103	1.49E+01	4.66E-02	1.16E+02	8.88E+02	8.67E+01	1.07E+02	1.19E+03	4.99E+03
Palladium (46)	Pd-107	1.07E-07	6.50E+06	4.27E+01	3.48E+02	6.62E+01	8.20E+01		
Palladium (46)	Pd-109	4.43E+02	1.56E-03	1.16E+03	8.57E+03	9.87E+01	1.23E+02	1.25E+04	5.23E+04
Palladium (46)	Pd-109m	7.77E+04	8.92E-06	2.02E+05	1.49E+06	9.39E+01	1.21E+02	2.17E+06	9.12E+06
Palladium (46)	Pd-111	1.56E+04	4.45E-05	1.90E+04	1.46E+05	2.20E+01	2.75E+01	1.76E+06	7.39E+06
Palladium (46)	Pd-112	2.89E+02	2.40E-03	1.07E+02	6.69E+02	2.57E+01	3.42E+01	2.89E+02	1.21E+03
Palladium (46)	Pd-114	1.51E+05	4.60E-06	1.03E+18	4.32E+18	5.55E+02	2.33E+03	2.27E+18	9.52E+18
Palladium (46)	Pd-96	1.79E+05	3.87E-06	9.19E+13	3.86E+14	3.82E+01	1.60E+02	1.45E+13	6.08E+13
Palladium (46)	Pd-97	1.17E+05	5.90E-06	3.57E+05	1.70E+06	1.46E+01	2.31E+01	1.40E+05	5.87E+05
Palladium (46)	Pd-98	2.06E+04	3.37E-05	3.05E+11	1.29E+12	8.28E+01	3.02E+02	1.45E+11	6.10E+11
Palladium (46)	Pd-99	1.70E+04	4.07E-05	2.35E+04	1.01E+05	8.00E+01	2.22E+02	7.55E+03	3.17E+04
Promethium (61)	Pm-136	2.04E+05	3.39E-06	7.57E+04	3.22E+05	3.54E+01	1.29E+02	1.97E+04	8.28E+04
Promethium (61)	Pm-137m	1.52E+05	4.57E-06	3.09E+05	1.35E+06	4.26E+00	5.56E+00	1.93E+05	8.13E+05
Promethium (61)	Pm-139	8.78E+04	7.90E-06	2.07E+05	1.04E+06	1.73E+01	2.38E+01	1.12E+05	4.72E+05
Promethium (61)	Pm-140	2.38E+06	2.92E-07	1.26E+06	7.62E+06	2.58E+01	3.76E+01	3.41E+06	1.43E+07
Promethium (61)	Pm-140m	6.12E+04	1.13E-05	3.25E+04	1.96E+05	2.05E+01	3.45E+01	8.79E+04	3.69E+05
Promethium (61)	Pm-141	1.74E+04	3.98E-05	2.11E+05	9.09E+05	2.18E+02	7.13E+02	1.12E+05	4.69E+05
Promethium (61)	Pm-142	5.40E+05	1.28E-06	1.08E+21	4.52E+21	2.26E+02	9.50E+02	1.95E+21	8.18E+21
Promethium (61)	Pm-143	9.55E-01	7.26E-01	3.33E+00	1.60E+01	1.31E+01	1.64E+01	1.76E+00	7.40E+00
Promethium (61)	Pm-144	6.97E-01	9.95E-01	6.26E-01	2.95E+00	2.17E-03	2.69E-03	1.41E-01	5.92E-01

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Promethium (61)	Pm-145	3.92E-02	1.77E+01	1.07E+01	6.64E+01	5.06E+00	6.27E+00	1.62E+01	6.81E+01
Promethium (61)	Pm-146	1.25E-01	5.53E+00	8.02E-01	4.12E+00	4.78E-03	5.92E-03	3.96E-01	1.66E+00
Promethium (61)	Pm-147	2.64E-01	2.62E+00	7.08E+00	5.82E+01	1.79E-03	2.21E-03	2.80E+08	1.17E+09
Promethium (61)	Pm-148	4.71E+01	1.47E-02	2.04E+01	1.29E+02	1.06E-03	1.32E-03	7.41E+01	3.11E+02
Promethium (61)	Pm-148m	6.13E+00	1.13E-01	1.90E+00	9.39E+00	1.06E-03	1.31E-03	5.27E-01	2.22E+00
Promethium (61)	Pm-149	1.14E+02	6.06E-03	1.75E+02	1.34E+03	5.18E+01	6.44E+01	3.20E+04	1.35E+05
Promethium (61)	Pm-150	2.27E+03	3.06E-04	1.28E+03	5.61E+03	8.79E+01	2.11E+02	4.61E+02	1.94E+03
Promethium (61)	Pm-151	2.14E+02	3.24E-03	2.65E+02	1.51E+03	4.17E+00	5.19E+00	2.13E+02	8.96E+02
Promethium (61)	Pm-152	8.84E+04	7.84E-06	3.04E+16	1.28E+17	6.16E+02	2.59E+03	2.71E+16	1.14E+17
Promethium (61)	Pm-152m	4.84E+04	1.43E-05	4.93E+14	2.07E+15	1.26E+02	5.31E+02	8.47E+13	3.56E+14
Promethium (61)	Pm-153	6.94E+04	9.99E-06	1.34E+05	9.66E+05	5.34E+01	6.77E+01	3.70E+05	1.55E+06
Promethium (61)	Pm-154	2.11E+05	3.29E-06	2.19E+18	9.19E+18	1.02E+02	4.30E+02	6.79E+17	2.85E+18
Promethium (61)	Pm-154m	1.36E+05	5.10E-06	1.13E+17	4.73E+17	1.05E+02	4.41E+02	2.00E+16	8.42E+16
Polonium (84)	Po-203	9.92E+03	6.98E-05	2.03E+03	8.86E+03	2.66E+01	5.73E+01	3.33E+02	1.40E+03
Polonium (84)	Po-204	1.72E+03	4.03E-04	3.50E+02	1.53E+03	2.42E+01	4.79E+01	4.03E+01	1.69E+02
Polonium (84)	Po-205	3.66E+03	1.89E-04	9.38E+02	4.19E+03	1.50E+01	2.26E+01	1.84E+02	7.71E+02
Polonium (84)	Po-206	2.87E+01	2.41E-02	1.79E+00	1.17E+01	5.68E-01	7.10E-01	6.29E-01	2.64E+00
Polonium (84)	Po-207	1.05E+03	6.62E-04	7.20E+02	3.09E+03	1.05E+00	1.32E+00	1.32E+02	5.55E+02
Polonium (84)	Po-208	2.39E-01	2.90E+00	1.16E-03	9.88E-03	5.88E-03	7.28E-03	2.57E+08	1.08E+09
Polonium (84)	Po-209	6.79E-03	1.02E+02	1.04E-03	8.88E-03	4.28E-03	5.30E-03	1.76E+03	7.41E+03
Polonium (84)	Po-210	1.83E+00	3.79E-01	2.81E-03	2.41E-02	9.32E-03	1.16E-02	1.10E+10	4.61E+10
Polonium (84)	Po-211	4.24E+07	1.64E-08	7.68E+34	3.22E+35	2.39E+04	1.01E+05	4.16E+36	1.75E+37
Polonium (84)	Po-212	7.31E+13	9.48E-15						
Polonium (84)	Po-212m	4.85E+05	1.43E-06	1.71E+22	7.16E+22	2.24E+03	9.40E+03	2.38E+23	1.00E+24
Polonium (84)	Po-213	5.20E+12	1.33E-13	2.00E+14	1.45E+15	6.21E+02	7.73E+02	1.03E+89	4.33E+89
Polonium (84)	Po-214	1.33E+11	5.21E-12	3.73E+09	3.21E+10	4.02E-03	4.98E-03	1.70E+15	7.15E+15
Polonium (84)	Po-215	1.23E+10	5.65E-11	8.13E+13	4.08E+14	3.20E+00	3.97E+00	6.75E+14	2.83E+15
Polonium (84)	Po-216	1.51E+08	4.60E-09	2.34E+07	1.72E+08	3.58E-01	4.44E-01	2.69E+07	1.13E+08
Polonium (84)	Po-218	1.17E+05	5.90E-06	3.30E+03	2.83E+04	4.01E-03	4.97E-03		
Praseodymium (59)	Pr-134	3.31E+04	2.09E-05	1.32E+04	8.03E+04	1.68E+01	2.72E+01	4.40E+04	1.85E+05
Praseodymium (59)	Pr-134m	2.14E+04	3.23E-05	8.58E+03	5.21E+04	1.79E+01	2.77E+01	2.86E+04	1.20E+05
Praseodymium (59)	Pr-135	1.52E+04	4.57E-05	1.42E+04	6.40E+04	7.51E+01	1.69E+02	3.41E+03	1.43E+04

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Praseodymium (59)	Pr-136	2.78E+04	2.49E-05	4.62E+12	1.95E+13	8.68E+01	3.37E+02	1.21E+12	5.07E+12
Praseodymium (59)	Pr-137	4.74E+03	1.46E-04	9.69E+03	4.22E+04	4.57E+00	5.69E+00	6.08E+03	2.56E+04
Praseodymium (59)	Pr-138	2.51E+05	2.76E-06	1.64E+20	6.89E+20	2.39E+02	1.01E+03	2.92E+20	1.23E+21
Praseodymium (59)	Pr-138m	2.86E+03	2.42E-04	1.06E+03	4.50E+03	6.79E+01	2.13E+02	1.60E+02	6.74E+02
Praseodymium (59)	Pr-139	1.38E+03	5.03E-04	3.25E+03	1.63E+04	1.98E+01	2.49E+01	1.76E+03	7.41E+03
Praseodymium (59)	Pr-140	1.07E+05	6.45E-06	8.15E+16	3.42E+17	3.66E+02	1.54E+03	8.34E+16	3.50E+17
Praseodymium (59)	Pr-142	3.18E+02	2.18E-03	3.27E+02	2.30E+03	6.38E+01	8.04E+01	3.29E+04	1.38E+05
Praseodymium (59)	Pr-142m	2.49E+04	2.78E-05	2.57E+04	1.81E+05	6.30E+01	7.94E+01		
Praseodymium (59)	Pr-143	1.86E+01	3.72E-02	2.52E+01	2.00E+02	1.60E+01	1.99E+01	4.28E+10	1.80E+11
Praseodymium (59)	Pr-144	2.11E+04	3.29E-05	7.47E+12	3.37E+13	2.17E-03	2.69E-03	2.42E+14	1.01E+15
Praseodymium (59)	Pr-144m	5.06E+04	1.37E-05	1.05E+13	4.72E+13	2.17E-03	2.69E-03	3.38E+14	1.42E+15
Praseodymium (59)	Pr-145	1.01E+03	6.83E-04	2.89E+03	1.82E+04	2.10E+02	2.66E+02	1.45E+05	6.07E+05
Praseodymium (59)	Pr-146	1.51E+04	4.59E-05	5.31E+09	2.27E+10	1.58E+02	5.07E+02	3.17E+09	1.33E+10
Praseodymium (59)	Pr-147	2.72E+04	2.55E-05	3.21E+04	2.22E+05	1.79E-03	2.21E-03	7.58E+04	3.18E+05
Praseodymium (59)	Pr-148	1.59E+05	4.36E-06	4.29E+18	1.80E+19	1.85E+02	7.77E+02	1.84E+18	7.75E+18
Praseodymium (59)	Pr-148m	1.81E+05	3.82E-06	1.04E+18	4.37E+18	2.04E+02	8.58E+02	2.99E+17	1.26E+18
Platinum (78)	Pt-184	2.11E+04	3.29E-05	9.70E+03	4.17E+04	5.69E+01	1.53E+02	1.14E+03	4.79E+03
Platinum (78)	Pt-186	2.92E+03	2.37E-04	1.10E+03	4.79E+03	9.67E-03	1.20E-02	1.89E+02	7.94E+02
Platinum (78)	Pt-187	2.58E+03	2.68E-04	2.33E+03	1.03E+04	1.17E+02	2.33E+02	3.84E+02	1.61E+03
Platinum (78)	Pt-188	2.48E+01	2.79E-02	7.74E+00	3.72E+01	1.29E+01	1.80E+01	1.70E+00	7.14E+00
Platinum (78)	Pt-189	5.58E+02	1.24E-03	6.66E+02	3.27E+03	4.61E+01	6.24E+01	1.41E+02	5.91E+02
Platinum (78)	Pt-190	1.07E-12	6.50E+11	2.41E-01	1.93E+00	4.32E-03	5.36E-03		
Platinum (78)	Pt-191	9.03E+01	7.68E-03	1.74E+02	9.06E+02	9.11E+01	1.23E+02	4.45E+01	1.87E+02
Platinum (78)	Pt-193	1.39E-02	5.00E+01	4.59E+01	3.74E+02	6.00E+01	7.44E+01	8.72E+03	3.66E+04
Platinum (78)	Pt-193m	5.84E+01	1.19E-02	2.02E+02	1.59E+03	2.41E+01	2.99E+01	3.78E+03	1.59E+04
Platinum (78)	Pt-195m	6.29E+01	1.10E-02	1.37E+02	9.71E+02	3.35E+01	4.18E+01	1.76E+02	7.41E+02
Platinum (78)	Pt-197	3.05E+02	2.27E-03	1.05E+03	7.87E+03	1.00E+02	1.25E+02	8.00E+03	3.36E+04
Platinum (78)	Pt-197m	3.82E+03	1.82E-04	9.23E+03	6.04E+04	8.24E+01	1.05E+02	1.23E+04	5.16E+04
Platinum (78)	Pt-199	1.18E+04	5.86E-05	3.24E+04	2.09E+05	4.37E+01	5.68E+01	5.83E+04	2.45E+05
Platinum (78)	Pt-200	4.86E+02	1.43E-03	4.08E+02	2.47E+03	5.25E+01	6.95E+01	1.28E+03	5.38E+03
Platinum (78)	Pt-202	1.38E+02	5.02E-03	4.48E+01	3.26E+02	1.64E+01	2.06E+01		
Plutonium (94)	Pu-232	1.08E+04	6.41E-05	5.24E+03	4.23E+04	6.57E-04	8.14E-04	3.07E+05	1.29E+06

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Plutonium (94)	Pu-234	6.90E+02	1.00E-03	1.41E+02	9.33E+02	3.38E-04	4.19E-04	1.33E+02	5.59E+02
Plutonium (94)	Pu-235	1.44E+04	4.81E-05	8.10E+05	6.34E+06	1.34E-04	1.66E-04	9.40E+06	3.95E+07
Plutonium (94)	Pu-236	2.42E-01	2.86E+00	2.27E-02	1.66E-01	4.47E-04	5.54E-04	5.57E+00	2.34E+01
Plutonium (94)	Pu-237	5.60E+00	1.24E-01	4.90E+01	2.84E+02	3.76E-04	4.66E-04	4.36E+01	1.83E+02
Plutonium (94)	Pu-238	7.90E-03	8.77E+01	8.63E-03	5.88E-02	1.78E-04	2.20E-04	1.15E+03	4.85E+03
Plutonium (94)	Pu-239	2.87E-05	2.41E+04	7.85E-03	5.32E-02	9.77E-05	1.21E-04	1.32E+04	5.54E+04
Plutonium (94)	Pu-240	1.06E-04	6.56E+03	7.85E-03	5.32E-02	1.98E-04	2.45E-04	4.50E+03	1.89E+04
Plutonium (94)	Pu-241	4.83E-02	1.44E+01	3.10E-01	2.13E+00	2.02E-04	2.50E-04	5.63E+02	2.37E+03
Plutonium (94)	Pu-242	1.85E-06	3.75E+05	8.25E-03	5.59E-02	1.68E-04	2.09E-04	2.89E+03	1.21E+04
Plutonium (94)	Pu-243	1.22E+03	5.66E-04	1.41E+04	8.82E+04	8.02E-05	9.93E-05	4.51E+04	1.89E+05
Plutonium (94)	Pu-244	8.66E-09	8.00E+07	4.02E-03	2.72E-02	1.31E-04	1.62E-04	1.33E+00	5.60E+00
Plutonium (94)	Pu-245	5.78E+02	1.20E-03	6.13E+02	3.35E+03	1.38E-04	1.71E-04	5.39E+02	2.26E+03
Plutonium (94)	Pu-246	2.33E+01	2.97E-02	7.96E+00	4.63E+01	1.22E-04	1.51E-04	6.89E+00	2.89E+01
Radium (88)	Ra-219	2.19E+09	3.17E-10	3.88E+36	1.63E+37	1.15E+03	4.84E+03	2.11E+38	8.84E+38
Radium (88)	Ra-220	1.22E+09	5.68E-10	3.59E+41	1.51E+42	4.31E+04	1.81E+05	2.08E+43	8.75E+43
Radium (88)	Ra-221	7.81E+05	8.88E-07	2.15E+07	1.56E+08	5.63E+02	7.50E+02	9.39E+23	3.94E+24
Radium (88)	Ra-222	5.75E+05	1.20E-06	1.61E+04	1.39E+05	4.02E-03	4.98E-03	7.36E+09	3.09E+10
Radium (88)	Ra-223	2.21E+01	3.13E-02	2.29E-01	2.83E+00	4.64E-03	5.75E-03	4.36E+01	1.83E+02
Radium (88)	Ra-224	6.91E+01	1.00E-02	1.12E+00	1.22E+01	1.16E-02	1.44E-02	1.37E+01	5.76E+01
Radium (88)	Ra-225	1.70E+01	4.08E-02	1.32E-01	1.63E+00	2.48E-03	3.07E-03	3.87E+01	1.62E+02
Radium (88)	Ra-226	4.33E-04	1.60E+03	7.43E-04	6.47E-03	2.06E-03	2.55E-03	2.45E-01	1.03E+00
Radium (88)	Ra-227	8.63E+03	8.03E-05	1.00E+03	8.51E+03	5.48E-04	6.80E-04	2.97E+05	1.25E+06
Radium (88)	Ra-228	1.21E-01	5.75E+00	1.46E-03	1.96E-02	6.78E-04	8.40E-04	2.05E-01	8.63E-01
Radium (88)	Ra-230	3.92E+03	1.77E-04	4.58E+03	2.05E+04	3.49E-04	4.32E-04	3.58E+03	1.50E+04
Rubidium (37)	Rb-77	9.66E+04	7.17E-06	6.12E+04	2.61E+05	5.83E+01	1.83E+02	1.90E+04	7.97E+04
Rubidium (37)	Rb-78	2.06E+04	3.36E-05	3.40E+11	1.44E+12	4.23E+01	1.64E+02	1.09E+11	4.57E+11
Rubidium (37)	Rb-78m	6.35E+04	1.09E-05	7.05E+12	2.97E+13	5.16E+01	2.15E+02	2.25E+12	9.47E+12
Rubidium (37)	Rb-79	1.59E+04	4.36E-05	5.99E+04	2.52E+05	1.07E+02	3.75E+02	2.50E+04	1.05E+05
Rubidium (37)	Rb-80	6.54E+05	1.06E-06	4.22E+21	1.77E+22	1.61E+02	6.77E+02	8.90E+21	3.74E+22
Rubidium (37)	Rb-81	1.33E+03	5.22E-04	1.89E+03	8.06E+03	1.99E+02	4.37E+02	1.03E+03	4.33E+03
Rubidium (37)	Rb-81m	1.19E+04	5.80E-05	1.74E+04	7.44E+04	1.83E+02	3.82E+02	9.50E+03	3.99E+04
Rubidium (37)	Rb-82	2.86E+05	2.42E-06	1.50E+19	6.30E+19	1.75E+02	7.37E+02	4.59E+19	1.93E+20

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Rubidium (37)	Rb-82m	9.38E+02	7.39E-04	2.98E+02	1.27E+03	5.24E+01	1.46E+02	4.69E+01	1.97E+02
Rubidium (37)	Rb-83	2.93E+00	2.36E-01	2.11E+00	1.21E+01	2.62E+01	3.40E+01	1.91E+00	8.03E+00
Rubidium (37)	Rb-84	7.72E+00	8.98E-02	3.05E+00	1.75E+01	1.27E+01	1.64E+01	3.51E+00	1.48E+01
Rubidium (37)	Rb-84m	1.80E+04	3.85E-05	7.10E+03	4.06E+04	1.23E+01	1.62E+01	8.18E+03	3.44E+04
Rubidium (37)	Rb-86	1.36E+01	5.11E-02	7.25E+00	5.32E+01	8.24E+00	1.02E+01	5.15E+02	2.16E+03
Rubidium (37)	Rb-86m	3.58E+05	1.93E-06	1.92E+05	1.40E+06	8.06E+00	1.02E+01	1.36E+07	5.71E+07
Rubidium (37)	Rb-87	1.41E-11	4.92E+10	1.10E+00	8.73E+00	2.60E+00	3.22E+00		
Rubidium (37)	Rb-88	2.05E+04	3.38E-05	1.53E+12	6.60E+12	2.20E+02	6.60E+02	2.56E+12	1.07E+13
Rubidium (37)	Rb-89	2.40E+04	2.88E-05	1.45E+04	1.15E+05	4.65E+00	6.00E+00	2.01E+09	8.43E+09
Rubidium (37)	Rb-90	1.38E+05	5.01E-06	3.29E+05	2.53E+06	2.62E-01	3.26E-01	2.72E+11	1.14E+12
Rubidium (37)	Rb-90m	8.47E+04	8.18E-06	2.01E+05	1.55E+06	2.62E-01	3.26E-01	1.67E+11	7.00E+11
Rhenium (75)	Re-178	2.76E+04	2.51E-05	9.80E+04	5.39E+05	3.18E+01	5.04E+01	6.42E+04	2.70E+05
Rhenium (75)	Re-179	1.87E+04	3.71E-05	2.61E+05	1.20E+06	5.37E+01	8.51E+01	8.87E+04	3.73E+05
Rhenium (75)	Re-180	1.49E+05	4.64E-06	4.01E+17	1.68E+18	1.64E+02	6.90E+02	6.48E+16	2.72E+17
Rhenium (75)	Re-181	3.05E+02	2.27E-03	2.61E+02	1.24E+03	5.34E+01	7.82E+01	4.90E+01	2.06E+02
Rhenium (75)	Re-182	9.49E+01	7.31E-03	3.54E+01	1.73E+02	2.33E+01	3.39E+01	3.63E+00	1.53E+01
Rhenium (75)	Re-182m	4.78E+02	1.45E-03	3.36E+02	1.49E+03	8.25E+01	1.61E+02	5.00E+01	2.10E+02
Rhenium (75)	Re-183	3.61E+00	1.92E-01	5.07E+00	3.42E+01	1.10E+01	1.37E+01	3.66E+00	1.54E+01
Rhenium (75)	Re-184	6.66E+00	1.04E-01	4.42E+00	2.23E+01	1.58E+01	2.06E+01	1.28E+00	5.38E+00
Rhenium (75)	Re-184m	1.50E+00	4.63E-01	8.34E-01	4.69E+00	3.26E+00	4.09E+00	3.31E-01	1.39E+00
Rhenium (75)	Re-186	6.80E+01	1.02E-02	7.32E+01	5.74E+02	1.05E-02	1.29E-02	2.02E+03	8.48E+03
Rhenium (75)	Re-186m	3.47E-06	2.00E+05	4.37E-01	3.46E+00	1.03E-02	1.28E-02	1.28E+01	5.36E+01
Rhenium (75)	Re-187	1.68E-11	4.12E+10	3.43E+02	2.79E+03	1.02E+03	1.27E+03		
Rhenium (75)	Re-188	3.57E+02	1.94E-03	3.52E+02	2.53E+03	6.38E+01	8.03E+01	3.10E+03	1.30E+04
Rhenium (75)	Re-188m	1.96E+04	3.54E-05	1.93E+04	1.39E+05	6.13E+01	7.80E+01	1.70E+05	7.15E+05
Rhenium (75)	Re-189	2.50E+02	2.77E-03	4.61E+02	3.34E+03	8.40E+01	1.06E+02	3.86E+03	1.62E+04
Rhenium (75)	Re-190	1.17E+05	5.90E-06	6.85E+16	2.88E+17	1.48E+02	6.21E+02	1.24E+16	5.19E+16
Rhenium (75)	Re-190m	1.90E+03	3.65E-04	9.82E+02	4.37E+03	7.52E+01	1.57E+02	2.00E+02	8.42E+02
Rhodium (45)	Rh-100	2.92E+02	2.37E-03	9.32E+01	4.13E+02	4.12E+01	8.93E+01	2.07E+01	8.70E+01
Rhodium (45)	Rh-100m	7.92E+04	8.75E-06	2.56E+04	1.14E+05	4.15E+01	9.04E+01	5.70E+03	2.39E+04
Rhodium (45)	Rh-101	2.10E-01	3.30E+00	1.87E+00	1.01E+01	7.77E+00	9.69E+00	7.70E-01	3.23E+00
Rhodium (45)	Rh-101m	5.83E+01	1.19E-02	1.37E+02	6.64E+02	6.64E+01	8.83E+01	6.38E+01	2.68E+02

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Rhodium (45)	Rh-102	1.22E+00	5.67E-01	1.38E+00	7.84E+00	5.37E+00	6.72E+00	1.65E+00	6.94E+00
Rhodium (45)	Rh-102m	1.85E-01	3.74E+00	2.92E-01	1.46E+00	2.00E+00	2.52E+00	7.48E-02	3.14E-01
Rhodium (45)	Rh-103m	6.49E+03	1.07E-04	2.04E+06	1.29E+07	1.39E+04	1.74E+04	3.21E+07	1.35E+08
Rhodium (45)	Rh-104	5.17E+05	1.34E-06	1.18E+22	4.95E+22	6.38E+03	2.68E+04	2.95E+23	1.24E+24
Rhodium (45)	Rh-104m	8.39E+04	8.26E-06	6.61E+16	2.78E+17	3.86E+03	1.62E+04	1.26E+17	5.31E+17
Rhodium (45)	Rh-105	1.72E+02	4.04E-03	5.63E+02	3.64E+03	1.04E+02	1.33E+02	4.60E+03	1.93E+04
Rhodium (45)	Rh-106	7.33E+05	9.45E-07	1.99E+22	8.36E+22	8.35E+02	3.51E+03	3.69E+22	1.55E+23
Rhodium (45)	Rh-106m	2.78E+03	2.49E-04	8.94E+02	3.81E+03	5.62E+01	1.68E+02	1.54E+02	6.46E+02
Rhodium (45)	Rh-107	1.68E+04	4.13E-05	1.13E+11	4.85E+11	5.84E+01	7.74E+01	6.81E+10	2.86E+11
Rhodium (45)	Rh-108	1.30E+06	5.33E-07	8.95E+23	3.76E+24	5.55E+02	2.33E+03	8.62E+23	3.62E+24
Rhodium (45)	Rh-109	2.73E+05	2.54E-06	7.14E+05	5.28E+06	8.56E+01	1.17E+02	7.67E+06	3.22E+07
Rhodium (45)	Rh-94	3.10E+05	2.24E-06	1.11E+05	4.74E+05	2.79E+01	9.82E+01	4.70E+04	1.97E+05
Rhodium (45)	Rh-95	7.26E+04	9.55E-06	3.19E+04	1.38E+05	3.46E+01	1.03E+02	9.53E+03	4.00E+04
Rhodium (45)	Rh-95m	1.86E+05	3.73E-06	8.17E+04	3.52E+05	3.12E+01	9.54E+01	2.44E+04	1.02E+05
Rhodium (45)	Rh-96	3.68E+04	1.88E-05	1.68E+13	7.07E+13	4.93E+01	2.07E+02	2.65E+12	1.11E+13
Rhodium (45)	Rh-96m	2.41E+05	2.87E-06	1.56E+14	6.55E+14	5.29E+01	2.22E+02	2.46E+13	1.03E+14
Rhodium (45)	Rh-97	1.19E+04	5.84E-05	3.60E+04	1.72E+05	1.79E+01	2.48E+01	1.41E+04	5.93E+04
Rhodium (45)	Rh-97m	7.88E+03	8.79E-05	2.97E+03	1.27E+04	1.64E+01	2.41E+01	7.31E+02	3.07E+03
Rhodium (45)	Rh-98	4.19E+04	1.66E-05	9.66E+13	4.06E+14	1.07E+02	4.50E+02	5.13E+13	2.16E+14
Rhodium (45)	Rh-99	1.57E+01	4.41E-02	1.72E+01	8.64E+01	2.85E+01	3.74E+01	5.96E+00	2.50E+01
Rhodium (45)	Rh-99m	1.29E+03	5.37E-04	1.80E+03	7.72E+03	2.29E+02	5.96E+02	5.76E+02	2.42E+03
Radon (86)	Rn-207	3.94E+04	1.76E-05	1.07E+04	4.66E+04	1.33E+00	1.69E+00	1.70E+03	7.15E+03
Radon (86)	Rn-209	1.28E+04	5.42E-05	1.57E+03	1.00E+04	5.37E-03	6.65E-03	5.21E+02	2.19E+03
Radon (86)	Rn-210	2.53E+03	2.74E-04	6.08E+01	4.65E+02	1.67E-01	2.08E-01	5.62E+01	2.36E+02
Radon (86)	Rn-211	4.16E+02	1.67E-03	5.82E+01	3.59E+02	3.68E-01	4.57E-01	2.82E+01	1.19E+02
Radon (86)	Rn-212	1.52E+04	4.55E-05	7.39E+01	6.30E+02	5.88E-03	7.28E-03	1.64E+13	6.88E+13
Radon (86)	Rn-215	9.50E+12	7.29E-14			2.39E+04	1.01E+05		
Radon (86)	Rn-216	4.86E+11	1.43E-12						
Radon (86)	Rn-217	4.05E+10	1.71E-11			6.21E+02	7.73E+02		
Radon (86)	Rn-218	6.24E+08	1.11E-09	1.75E+07	1.51E+08	4.02E-03	4.98E-03	7.99E+12	3.36E+13
Radon (86)	Rn-219	5.52E+06	1.26E-07	3.65E+10	1.83E+11	3.20E+00	3.97E+00	3.03E+11	1.27E+12
Radon (86)	Rn-220	3.93E+05	1.76E-06	6.31E+04	4.74E+05	3.57E-01	4.43E-01	7.80E+04	3.28E+05

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Radon (86)	Rn-222	6.62E+01	1.05E-02	1.86E+00	1.60E+01	4.01E-03	4.97E-03	1.62E+01	6.82E+01
Radon (86)	Rn-223	1.50E+04	4.62E-05	1.55E+02	1.91E+03	4.63E-03	5.74E-03	2.95E+04	1.24E+05
Ruthenium (44)	Ru-103	6.44E+00	1.08E-01	6.79E+00	3.58E+01	1.34E+01	1.70E+01	7.65E+00	3.21E+01
Ruthenium (44)	Ru-105	1.37E+03	5.07E-04	1.04E+03	5.11E+03	5.34E+01	7.86E+01	6.60E+02	2.77E+03
Ruthenium (44)	Ru-106	6.77E-01	1.02E+00	2.97E-01	2.23E+00	6.03E-01	7.47E-01		
Ruthenium (44)	Ru-107	9.71E+04	7.13E-06	5.40E+11	2.32E+12	5.26E+01	7.47E+01	3.26E+11	1.37E+12
Ruthenium (44)	Ru-108	8.01E+04	8.66E-06	6.84E+16	2.87E+17	4.70E+02	1.97E+03	6.54E+16	2.75E+17
Ruthenium (44)	Ru-92	9.98E+04	6.94E-06	5.01E+14	2.10E+15	3.27E+01	1.37E+02	6.90E+13	2.90E+14
Ruthenium (44)	Ru-94	7.03E+03	9.86E-05	2.51E+03	1.08E+04	6.40E+01	1.87E+02	1.07E+03	4.48E+03
Ruthenium (44)	Ru-95	3.69E+03	1.88E-04	1.62E+03	7.00E+03	6.51E+01	1.54E+02	4.85E+02	2.04E+03
Ruthenium (44)	Ru-97	8.72E+01	7.95E-03	2.65E+02	1.26E+03	2.09E+01	2.63E+01	1.04E+02	4.36E+02
Sulfur (16)	S-35	2.89E+00	2.40E-01	3.97E+01	3.12E+02	2.14E+01	2.65E+01		
Sulphur (16)	S-37	7.21E+04	9.61E-06	1.47E+15	6.19E+15	5.80E+01	2.44E+02	1.02E+15	4.30E+15
Sulfur (16)	S-38	2.14E+03	3.24E-04	6.05E+02	2.63E+03	3.69E+01	8.47E+01	5.17E+02	2.17E+03
Antimony (51)	Sb-111	2.91E+05	2.38E-06	5.01E+05	2.42E+06	5.30E+01	1.19E+02	1.26E+05	5.29E+05
Antimony (51)	Sb-113	5.46E+04	1.27E-05	8.26E+04	4.88E+05	9.26E+00	1.21E+01	1.32E+05	5.54E+05
Antimony (51)	Sb-114	1.04E+05	6.64E-06	2.21E+16	9.29E+16	7.03E+01	2.95E+02	7.90E+15	3.32E+16
Antimony (51)	Sb-115	1.13E+04	6.11E-05	1.15E+04	4.84E+04	2.09E+02	7.40E+02	4.29E+03	1.80E+04
Antimony (51)	Sb-116	2.31E+04	3.01E-05	1.36E+12	5.75E+12	8.00E+01	3.12E+02	4.91E+11	2.06E+12
Antimony (51)	Sb-116m	6.04E+03	1.15E-04	1.84E+03	7.78E+03	5.78E+01	2.06E+02	2.24E+02	9.40E+02
Antimony (51)	Sb-117	2.17E+03	3.20E-04	1.10E+04	4.75E+04	7.76E+02	1.73E+03	3.07E+03	1.29E+04
Antimony (51)	Sb-118	1.01E+05	6.85E-06	1.55E+17	6.50E+17	2.45E+02	1.03E+03	3.14E+17	1.32E+18
Antimony (51)	Sb-118m	1.21E+03	5.71E-04	4.31E+02	1.84E+03	5.89E+01	1.67E+02	5.23E+01	2.20E+02
Antimony (51)	Sb-119	1.59E+02	4.36E-03	2.37E+03	1.55E+04	9.01E+02	1.13E+03	4.48E+03	1.88E+04
Antimony (51)	Sb-120	2.29E+04	3.02E-05	5.77E+12	2.44E+13	4.10E+02	1.44E+03	5.99E+12	2.51E+13
Antimony (51)	Sb-120m	4.39E+01	1.58E-02	1.35E+01	6.26E+01	2.39E+01	3.77E+01	1.87E+00	7.85E+00
Antimony (51)	Sb-122	9.29E+01	7.46E-03	5.92E+01	3.61E+02	3.07E+01	4.01E+01	1.38E+02	5.78E+02
Antimony (51)	Sb-122m	8.69E+04	7.97E-06	5.54E+04	3.37E+05	3.05E+01	4.00E+01	1.29E+05	5.41E+05
Antimony (51)	Sb-124	4.20E+00	1.65E-01	1.24E+00	6.54E+00	4.40E+00	5.62E+00	7.49E-01	3.15E+00
Antimony (51)	Sb-124m	2.35E+05	2.95E-06	9.27E+04	4.87E+05	5.79E+00	7.46E+00	5.59E+04	2.35E+05
Antimony (51)	Sb-124n	1.80E+04	3.84E-05	7.11E+03	3.74E+04	5.78E+00	7.46E+00	4.29E+03	1.80E+04
Antimony (51)	Sb-125	2.51E-01	2.76E+00	9.28E-01	5.39E+00	3.09E+00	3.84E+00	9.11E-01	3.82E+00

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Antimony (51)	Sb-126	2.05E+01	3.38E-02	4.54E+00	2.26E+01	9.52E+00	1.30E+01	1.01E+00	4.24E+00
Antimony (51)	Sb-126m	1.90E+04	3.64E-05	3.01E+04	1.50E+05	4.33E+01	7.66E+01	6.70E+03	2.81E+04
Antimony (51)	Sb-127	6.57E+01	1.05E-02	3.11E+01	1.87E+02	1.00E+01	1.27E+01	4.26E+01	1.79E+02
Antimony (51)	Sb-128	6.74E+02	1.03E-03	1.77E+02	7.87E+02	3.59E+01	7.40E+01	2.65E+01	1.11E+02
Antimony (51)	Sb-128m	3.50E+04	1.98E-05	2.51E+05	1.11E+06	8.94E+01	3.18E+02	3.75E+04	1.57E+05
Antimony (51)	Sb-129	1.38E+03	5.02E-04	5.74E+02	2.82E+03	3.94E-01	4.90E-01	3.27E+02	1.37E+03
Antimony (51)	Sb-130	9.22E+03	7.52E-05	2.57E+03	1.09E+04	5.44E+01	1.92E+02	3.04E+02	1.28E+03
Antimony (51)	Sb-130m	5.78E+04	1.20E-05	3.67E+14	1.54E+15	7.09E+01	2.98E+02	6.26E+13	2.63E+14
Antimony (51)	Sb-131	1.58E+04	4.38E-05	1.05E+03	8.38E+03	1.61E+00	2.03E+00	5.80E+03	2.43E+04
Antimony (51)	Sb-133	1.46E+05	4.76E-06	3.61E+04	2.49E+05	6.52E+00	9.14E+00	5.23E+04	2.20E+05
Scandium (21)	Sc-42m	3.52E+05	1.97E-06	1.58E+19	6.65E+19	4.51E+01	1.89E+02	3.31E+18	1.39E+19
Scandium (21)	Sc-43	1.56E+03	4.44E-04	1.27E+03	5.61E+03	1.20E+02	2.54E+02	3.42E+03	1.44E+04
Scandium (21)	Sc-44	1.53E+03	4.53E-04	6.02E+02	2.63E+03	6.19E+01	1.48E+02	3.98E+02	1.67E+03
Scandium (21)	Sc-44m	1.04E+02	6.69E-03	2.44E+01	1.25E+02	1.81E+01	2.66E+01	2.42E+01	1.02E+02
Scandium (21)	Sc-46	3.02E+00	2.30E-01	1.08E+00	5.19E+00	5.51E+00	7.12E+00	4.65E-01	1.95E+00
Scandium (21)	Sc-47	7.55E+01	9.18E-03	1.71E+02	1.12E+03	5.23E+01	6.60E+01	4.28E+02	1.80E+03
Scandium (21)	Sc-48	1.39E+02	4.99E-03	3.14E+01	1.46E+02	2.11E+01	3.54E+01	7.87E+00	3.30E+01
Scandium (21)	Sc-49	6.37E+03	1.09E-04	3.93E+04	1.93E+05	8.69E+02	1.13E+03	5.98E+07	2.51E+08
Scandium (21)	Sc-50	2.13E+05	3.25E-06	1.12E+18	4.71E+18	5.80E+01	2.44E+02	2.43E+17	1.02E+18
Selenium (34)	Se-70	8.86E+03	7.82E-05	1.63E+03	6.92E+03	3.36E+01	1.08E+02	3.27E+02	1.37E+03
Selenium (34)	Se-71	7.68E+04	9.02E-06	8.76E+04	4.26E+05	4.64E+01	9.06E+01	3.40E+04	1.43E+05
Selenium (34)	Se-72	3.01E+01	2.30E-02	4.46E+00	2.98E+01	7.65E+00	9.97E+00	8.07E+00	3.39E+01
Selenium (34)	Se-73	8.49E+02	8.16E-04	5.71E+02	2.62E+03	2.17E+01	2.94E+01	1.54E+02	6.48E+02
Selenium (34)	Se-73m	9.15E+03	7.57E-05	6.37E+03	2.92E+04	2.23E+01	3.01E+01	2.16E+03	9.08E+03
Selenium (34)	Se-75	2.11E+00	3.28E-01	1.28E+00	8.34E+00	2.83E+01	3.64E+01	1.04E+00	4.38E+00
Selenium (34)	Se-77m	1.26E+06	5.50E-07	4.08E+25	1.71E+26	2.41E+03	1.01E+04	2.01E+25	8.44E+25
Selenium (34)	Se-79	2.35E-06	2.95E+05	4.83E-01	4.88E+00	6.43E+00	7.97E+00		
Selenium (34)	Se-79m	9.29E+04	7.46E-06	1.91E+10	1.93E+11	6.44E+00	7.98E+00	1.44E+18	6.06E+18
Selenium (34)	Se-81	1.97E+04	3.51E-05	9.62E+12	4.35E+13	2.06E+03	2.94E+03	3.38E+14	1.42E+15
Selenium (34)	Se-81m	6.36E+03	1.09E-04	4.19E+04	2.07E+05	5.24E+02	6.88E+02	2.28E+05	9.58E+05
Selenium (34)	Se-83	1.63E+04	4.24E-05	2.76E+05	1.47E+06	6.16E+01	1.93E+02	1.71E+07	7.16E+07
Selenium (34)	Se-83m	3.12E+05	2.22E-06	5.24E+06	2.79E+07	1.47E+02	4.16E+02	3.27E+08	1.37E+09

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Selenium (34)	Se-84	1.17E+05	5.90E-06	5.66E+08	2.41E+09	7.62E+01	2.68E+02	3.35E+08	1.41E+09
Silicon (14)	Si-31	2.32E+03	2.99E-04	1.33E+04	7.47E+04	4.58E+02	5.77E+02	2.60E+07	1.09E+08
Silicon (14)	Si-32	5.25E-03	1.32E+02	5.18E-01	4.13E+00	3.62E-01	4.49E-01		
Samarium (62)	Sm-139	1.42E+05	4.89E-06	3.35E+05	1.68E+06	1.53E+01	2.28E+01	1.82E+05	7.63E+05
Samarium (62)	Sm-140	2.46E+04	2.82E-05	1.31E+04	7.89E+04	2.35E+01	3.57E+01	3.53E+04	1.48E+05
Samarium (62)	Sm-141	3.57E+04	1.94E-05	4.31E+05	1.86E+06	8.15E+01	2.87E+02	2.29E+05	9.60E+05
Samarium (62)	Sm-141m	1.61E+04	4.30E-05	1.95E+05	8.41E+05	6.45E+01	2.22E+02	1.03E+05	4.33E+05
Samarium (62)	Sm-142	5.02E+03	1.38E-04	3.91E+03	1.71E+04	1.44E+02	3.56E+02	6.11E+03	2.57E+04
Samarium (62)	Sm-143	4.16E+04	1.66E-05	1.45E+05	6.99E+05	1.26E+01	1.63E+01	7.69E+04	3.23E+05
Samarium (62)	Sm-143m	3.31E+05	2.09E-06	1.16E+06	5.56E+06	1.21E+01	1.60E+01	6.11E+05	2.57E+06
Samarium (62)	Sm-145	7.44E-01	9.32E-01	7.47E+00	4.61E+01	3.66E+00	4.53E+00	5.58E+00	2.35E+01
Samarium (62)	Sm-146	6.73E-09	1.03E+08	3.22E-02	2.47E-01	1.63E-03	2.02E-03		
Samarium (62)	Sm-147	6.54E-12	1.06E+11	3.53E-02	2.70E-01	1.79E-03	2.22E-03		
Samarium (62)	Sm-148	9.90E-17	7.00E+15	3.37E-02	2.59E-01	1.06E-03	1.32E-03		
Samarium (62)	Sm-151	7.70E-03	9.00E+01	1.68E+01	1.36E+02	4.43E+00	5.49E+00	5.52E+07	2.32E+08
Samarium (62)	Sm-153	1.31E+02	5.31E-03	2.53E+02	1.82E+03	5.45E+01	6.82E+01	6.97E+02	2.93E+03
Samarium (62)	Sm-155	1.63E+04	4.24E-05	4.63E+05	3.07E+06	6.65E+00	8.26E+00	9.38E+05	3.94E+06
Samarium (62)	Sm-156	6.46E+02	1.07E-03	2.20E+02	1.22E+03	8.72E+00	1.13E+01	2.05E+02	8.61E+02
Samarium (62)	Sm-157	4.54E+04	1.53E-05	6.32E+04	3.53E+05	8.18E+01	1.27E+02	3.50E+04	1.47E+05
Tin (50)	Sn-106	1.90E+05	3.65E-06	1.83E+15	7.68E+15	4.73E+01	1.98E+02	6.81E+14	2.86E+15
Tin (50)	Sn-108	3.54E+04	1.96E-05	1.23E+04	5.21E+04	5.05E+01	1.82E+02	4.01E+03	1.69E+04
Tin (50)	Sn-109	2.02E+04	3.42E-05	1.72E+04	8.88E+04	5.70E+00	7.54E+00	7.44E+03	3.13E+04
Tin (50)	Sn-110	1.48E+03	4.69E-04	6.38E+02	2.84E+03	6.44E+01	1.40E+02	2.92E+02	1.22E+03
Tin (50)	Sn-111	1.03E+04	6.72E-05	9.14E+03	4.14E+04	8.85E+01	1.51E+02	3.42E+03	1.44E+04
Tin (50)	Sn-113	2.20E+00	3.15E-01	3.26E+00	1.93E+01	9.65E+00	1.21E+01	5.21E+00	2.19E+01
Tin (50)	Sn-113m	1.70E+04	4.07E-05	2.77E+04	1.64E+05	1.06E+01	1.32E+01	4.42E+04	1.86E+05
Tin (50)	Sn-117m	1.84E+01	3.77E-02	3.14E+01	2.03E+02	1.39E+01	1.74E+01	3.31E+01	1.39E+02
Tin (50)	Sn-119m	8.63E-01	8.03E-01	6.59E+00	5.14E+01	1.15E+01	1.43E+01	9.78E+01	4.11E+02
Tin (50)	Sn-121	2.25E+02	3.09E-03	1.60E+03	1.30E+04	1.54E+02	1.90E+02		
Tin (50)	Sn-121m	1.58E-02	4.39E+01	2.90E+00	2.33E+01	2.71E+00	3.35E+00	5.28E+02	2.22E+03
Tin (50)	Sn-123	1.96E+00	3.54E-01	1.67E+00	1.30E+01	3.07E+00	3.81E+00	2.96E+03	1.24E+04
Tin (50)	Sn-123m	9.09E+03	7.62E-05	4.15E+04	1.83E+05	6.86E+02	1.28E+03	2.10E+04	8.80E+04

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Tin (50)	Sn-125	2.62E+01	2.64E-02	1.02E+01	6.90E+01	2.40E+00	2.99E+00	5.16E+01	2.17E+02
Tin (50)	Sn-125m	3.83E+04	1.81E-05	1.41E+05	8.21E+05	3.07E+00	3.84E+00	1.39E+05	5.82E+05
Tin (50)	Sn-126	3.01E-06	2.30E+05	1.90E-01	1.09E+00	2.61E-01	3.24E-01	9.85E-02	4.14E-01
Tin (50)	Sn-127	2.89E+03	2.40E-04	6.81E+02	3.42E+03	8.78E+00	1.19E+01	3.33E+02	1.40E+03
Tin (50)	Sn-127m	8.82E+04	7.86E-06	4.17E+04	2.51E+05	9.72E+00	1.26E+01	5.71E+04	2.40E+05
Tin (50)	Sn-128	6.17E+03	1.12E-04	2.03E+03	8.70E+03	6.02E+01	1.69E+02	3.98E+02	1.67E+03
Tin (50)	Sn-129	1.63E+05	4.24E-06	6.75E+04	3.32E+05	3.93E-01	4.89E-01	3.84E+04	1.61E+05
Tin (50)	Sn-130	9.79E+04	7.08E-06	2.57E+14	1.08E+15	5.33E+01	2.24E+02	4.37E+13	1.84E+14
Tin (50)	Sn-130m	2.14E+05	3.23E-06	6.56E+07	2.78E+08	4.45E+01	1.65E+02	7.75E+06	3.26E+07
Strontium (38)	Sr-79	1.62E+05	4.28E-06	6.09E+05	2.56E+06	6.51E+01	2.44E+02	2.55E+05	1.07E+06
Strontium (38)	Sr-80	3.43E+03	2.02E-04	1.58E+03	6.95E+03	7.86E+01	1.81E+02	1.80E+03	7.58E+03
Strontium (38)	Sr-81	1.63E+04	4.24E-05	2.32E+04	9.93E+04	7.73E+01	2.14E+02	1.27E+04	5.33E+04
Strontium (38)	Sr-82	9.97E+00	6.95E-02	1.96E+00	1.27E+01	3.50E+00	4.40E+00	2.23E+01	9.39E+01
Strontium (38)	Sr-83	1.87E+02	3.70E-03	7.35E+01	3.83E+02	1.92E+01	2.61E+01	4.20E+01	1.76E+02
Strontium (38)	Sr-85	3.90E+00	1.78E-01	4.52E+00	2.38E+01	4.24E+01	5.67E+01	2.45E+00	1.03E+01
Strontium (38)	Sr-85m	5.39E+03	1.29E-04	5.52E+03	2.75E+04	4.63E+01	6.40E+01	2.85E+03	1.20E+04
Strontium (38)	Sr-87m	2.16E+03	3.21E-04	6.05E+03	2.59E+04	3.02E+02	5.63E+02	3.88E+03	1.63E+04
Strontium (38)	Sr-89	5.01E+00	1.38E-01	3.01E+00	2.39E+01	4.94E+00	6.12E+00	4.19E+05	1.76E+06
Strontium (38)	Sr-90	2.41E-02	2.88E+01	5.72E-02	4.41E-01	2.63E-01	3.26E-01		
Strontium (38)	Sr-91	6.30E+02	1.10E-03	2.07E+02	1.21E+03	4.10E+00	5.16E+00	3.94E+02	1.65E+03
Strontium (38)	Sr-92	2.28E+03	3.04E-04	9.76E+02	4.60E+03	5.06E+01	9.06E+01	9.39E+02	3.94E+03
Strontium (38)	Sr-93	4.91E+04	1.41E-05	5.16E+04	3.39E+05	1.74E+00	2.19E+00	8.70E+05	3.65E+06
Strontium (38)	Sr-94	2.90E+05	2.39E-06	1.15E+13	4.93E+13	7.83E+01	2.88E+02	9.52E+12	4.00E+13
Tantalum (73)	Ta-170	5.39E+04	1.29E-05	1.43E+04	6.60E+04	2.14E+01	3.93E+01	2.98E+03	1.25E+04
Tantalum (73)	Ta-172	9.90E+03	7.00E-05	9.15E+03	4.70E+04	1.46E+00	1.85E+00	5.85E+02	7.74E+03
Tantalum (73)	Ta-173	1.93E+03	3.58E-04	1.42E+03	6.56E+03	9.78E+00	1.26E+01	2.70E+02	1.14E+03
Tantalum (73)	Ta-174	5.33E+03	1.30E-04	4.88E+03	2.08E+04	8.23E-03	1.02E-02	9.04E+02	3.80E+03
Tantalum (73)	Ta-175	5.78E+02	1.20E-03	3.12E+02	1.44E+03	2.13E+01	2.96E+01	5.76E+01	2.42E+02
Tantalum (73)	Ta-176	7.50E+02	9.24E-04	3.10E+02	1.35E+03	5.71E+01	1.37E+02	5.07E+01	2.13E+02
Tantalum (73)	Ta-177	1.07E+02	6.46E-03	8.22E+02	4.48E+03	3.29E+02	4.32E+02	5.08E+02	2.13E+03
Tantalum (73)	Ta-178	3.91E+04	1.77E-05	3.95E+15	1.66E+16	1.89E+03	7.95E+03	1.18E+15	4.95E+15
Tantalum (73)	Ta-178m	2.57E+03	2.69E-04	2.04E+03	8.73E+03	1.32E+02	3.37E+02	1.64E+02	6.89E+02

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Tantalum (73)	Ta-179	3.81E-01	1.82E+00	2.04E+01	1.18E+02	7.94E+01	9.88E+01	2.82E+01	1.19E+02
Tantalum (73)	Ta-180	7.45E+02	9.31E-04	9.27E+03	4.86E+04	7.60E+02	1.03E+03	5.71E+03	2.40E+04
Tantalum (73)	Ta-182	2.21E+00	3.14E-01	1.12E+00	5.76E+00	3.73E+00	4.71E+00	3.25E-01	1.36E+00
Tantalum (73)	Ta-182m	2.30E+04	3.01E-05	1.17E+04	5.99E+04	3.71E+00	4.69E+00	3.38E+03	1.42E+04
Tantalum (73)	Ta-183	4.96E+01	1.40E-02	4.44E+01	2.87E+02	1.71E+01	2.15E+01	2.41E+01	1.01E+02
Tantalum (73)	Ta-184	6.98E+02	9.93E-04	3.34E+02	1.54E+03	5.10E+01	8.83E+01	5.15E+01	2.16E+02
Tantalum (73)	Ta-185	7.37E+03	9.40E-05	1.36E+04	7.79E+04	1.01E+01	1.25E+01	8.01E+03	3.36E+04
Tantalum (73)	Ta-186	3.47E+04	2.00E-05	2.65E+13	1.12E+14	1.30E+02	4.74E+02	3.78E+12	1.59E+13
Terbium (65)	Tb-146	9.50E+05	7.29E-07	2.40E+05	1.17E+06	1.63E-03	2.02E-03	5.27E+04	2.22E+05
Terbium (65)	Tb-147	3.70E+03	1.87E-04	7.49E+02	3.35E+03	1.79E-03	2.22E-03	1.49E+02	6.24E+02
Terbium (65)	Tb-147m	1.95E+05	3.56E-06	7.57E+04	3.55E+05	1.79E-03	2.22E-03	1.57E+04	6.60E+04
Terbium (65)	Tb-148	6.07E+03	1.14E-04	2.09E+03	9.34E+03	6.58E-03	8.15E-03	6.32E+02	2.66E+03
Terbium (65)	Tb-148m	1.66E+05	4.19E-06	5.63E+05	4.37E+06	6.58E-03	8.15E-03	3.91E+16	1.64E+17
Terbium (65)	Tb-149	1.47E+03	4.70E-04	5.53E+02	2.55E+03	5.01E+00	6.45E+00	1.34E+02	5.63E+02
Terbium (65)	Tb-149m	8.76E+04	7.91E-06	8.59E+04	4.41E+05	2.22E+01	3.25E+01	2.63E+04	1.10E+05
Terbium (65)	Tb-150	1.74E+03	3.97E-04	6.71E+02	2.88E+03	1.35E-03	1.67E-03	1.50E+02	6.29E+02
Terbium (65)	Tb-150m	6.28E+04	1.10E-05	5.41E+09	4.14E+10	1.35E-03	1.67E-03	6.08E+15	2.55E+16
Terbium (65)	Tb-151	3.45E+02	2.01E-03	2.41E+02	1.13E+03	1.05E+01	1.35E+01	4.43E+01	1.86E+02
Terbium (65)	Tb-151m	8.74E+05	7.93E-07	6.50E+05	3.05E+06	1.10E+01	1.42E+01	1.20E+05	5.04E+05
Terbium (65)	Tb-152	3.47E+02	2.00E-03	1.77E+02	8.20E+02	7.13E-04	8.83E-04	4.85E+01	2.04E+02
Terbium (65)	Tb-152m	8.67E+04	7.99E-06	5.58E+04	2.59E+05	7.13E-04	8.83E-04	1.53E+04	6.44E+04
Terbium (65)	Tb-153	1.08E+02	6.41E-03	1.58E+02	8.16E+02	1.46E+01	1.84E+01	5.10E+01	2.14E+02
Terbium (65)	Tb-154	2.82E+02	2.45E-03	1.08E+02	4.82E+02	4.49E+01	9.16E+01	2.21E+01	9.26E+01
Terbium (65)	Tb-155	4.75E+01	1.46E-02	1.43E+02	7.63E+02	1.15E+02	1.51E+02	4.82E+01	2.02E+02
Terbium (65)	Tb-156	4.73E+01	1.47E-02	1.78E+01	8.37E+01	2.33E+01	3.45E+01	2.88E+00	1.21E+01
Terbium (65)	Tb-156m	2.49E+02	2.79E-03	8.91E+01	4.24E+02	2.07E+01	3.00E+01	1.51E+01	6.35E+01
Terbium (65)	Tb-156n	1.15E+03	6.05E-04	4.22E+02	2.00E+03	2.18E+01	3.19E+01	6.98E+01	2.93E+02
Terbium (65)	Tb-157	9.76E-03	7.10E+01	3.61E+01	2.51E+02	1.28E+01	1.58E+01	3.29E+02	1.38E+03
Terbium (65)	Tb-158	3.85E-03	1.80E+02	6.74E-01	3.52E+00	3.96E-01	4.91E-01	2.55E-01	1.07E+00
Terbium (65)	Tb-160	3.50E+00	1.98E-01	1.69E+00	8.93E+00	4.63E+00	5.85E+00	8.78E-01	3.69E+00
Terbium (65)	Tb-161	3.66E+01	1.89E-02	7.55E+01	5.74E+02	2.74E+01	3.40E+01	4.46E+02	1.87E+03
Terbium (65)	Tb-162	4.79E+04	1.45E-05	4.82E+14	2.02E+15	1.77E+02	7.44E+02	1.10E+14	4.64E+14

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Terbium (65)	Tb-163	1.87E+04	3.71E-05	4.77E+11	2.02E+12	2.28E+02	7.63E+02	1.39E+11	5.83E+11
Terbium (65)	Tb-164	1.21E+05	5.71E-06	8.70E+16	3.65E+17	7.83E+01	3.29E+02	1.23E+16	5.16E+16
Terbium (65)	Tb-165	1.73E+05	4.01E-06	1.23E+06	6.60E+06	1.55E+02	4.01E+02	5.19E+06	2.18E+07
Technetium (43)	Tc-101	2.57E+04	2.70E-05	4.91E+13	2.09E+14	4.92E+02	1.49E+03	2.63E+13	1.10E+14
Technetium (43)	Tc-102	4.14E+06	1.67E-07	1.85E+27	7.78E+27	1.53E+03	6.41E+03	9.85E+27	4.14E+28
Technetium (43)	Tc-102m	8.37E+04	8.28E-06	5.36E+15	2.25E+16	7.56E+01	3.18E+02	1.33E+15	5.58E+15
Technetium (43)	Tc-104	1.99E+04	3.48E-05	4.46E+11	1.89E+12	7.62E+01	2.79E+02	1.14E+11	4.77E+11
Technetium (43)	Tc-105	4.79E+04	1.45E-05	3.66E+04	1.79E+05	4.36E+01	7.28E+01	2.31E+04	9.72E+04
Technetium (43)	Tc-91	1.16E+05	5.97E-06	1.07E+08	7.91E+08	1.55E+01	2.40E+01	7.98E+08	3.35E+09
Technetium (43)	Tc-91m	1.10E+05	6.28E-06	8.19E+05	6.07E+06	8.84E+00	1.23E+01	6.28E+06	2.64E+07
Technetium (43)	Tc-92	8.57E+04	8.09E-06	3.08E+15	1.29E+16	4.99E+01	2.10E+02	4.25E+14	1.78E+15
Technetium (43)	Tc-93	2.21E+03	3.14E-04	1.35E+03	5.75E+03	9.44E+00	1.24E+01	4.83E+02	2.03E+03
Technetium (43)	Tc-93m	8.37E+03	8.28E-05	3.81E+03	1.61E+04	9.14E+00	1.22E+01	1.57E+03	6.57E+03
Technetium (43)	Tc-94	1.24E+03	5.57E-04	4.25E+02	1.81E+03	5.84E+01	1.64E+02	7.08E+01	2.97E+02
Technetium (43)	Tc-94m	7.00E+03	9.89E-05	3.18E+03	1.35E+04	8.71E+01	2.88E+02	1.44E+03	6.04E+03
Technetium (43)	Tc-95	3.04E+02	2.28E-03	3.23E+02	1.42E+03	1.41E+02	2.93E+02	1.21E+02	5.07E+02
Technetium (43)	Tc-95m	4.15E+00	1.67E-01	3.92E+00	1.89E+01	2.87E+01	3.83E+01	1.44E+00	6.03E+00
Technetium (43)	Tc-96	5.91E+01	1.17E-02	1.82E+01	8.27E+01	3.10E+01	5.33E+01	3.61E+00	1.51E+01
Technetium (43)	Tc-96m	7.07E+03	9.80E-05	2.18E+03	9.93E+03	3.12E+01	5.38E+01	4.39E+02	1.85E+03
Technetium (43)	Tc-97	2.67E-07	2.60E+06	2.13E+01	1.58E+02	2.30E+01	2.84E+01	1.41E+02	5.93E+02
Technetium (43)	Tc-97m	2.81E+00	2.47E-01	8.65E+00	7.07E+01	6.75E+00	8.37E+00	5.75E+02	2.41E+03
Technetium (43)	Tc-98	1.65E-07	4.20E+06	3.88E-01	2.01E+00	9.69E-01	1.21E+00	2.13E-01	8.95E-01
Technetium (43)	Tc-99	3.28E-06	2.11E+05	2.51E+00	2.08E+01	3.07E+00	3.81E+00	4.71E+08	1.98E+09
Technetium (43)	Tc-99m	1.01E+03	6.87E-04	7.18E+03	3.15E+04	3.06E+00	3.80E+00	3.53E+03	1.48E+04
Tellurium (52)	Te-113	2.14E+05	3.23E-06	3.24E+05	1.92E+06	8.35E+00	1.17E+01	5.18E+05	2.17E+06
Tellurium (52)	Te-114	2.40E+04	2.89E-05	1.35E+12	5.68E+12	4.60E+01	1.76E+02	4.16E+11	1.75E+12
Tellurium (52)	Te-115	6.28E+04	1.10E-05	4.71E+08	1.99E+09	6.05E+01	2.41E+02	1.76E+08	7.41E+08
Tellurium (52)	Te-115m	5.44E+04	1.27E-05	3.93E+08	1.66E+09	5.42E+01	2.17E+02	1.47E+08	6.19E+08
Tellurium (52)	Te-116	2.44E+03	2.84E-04	9.20E+02	3.95E+03	6.12E+01	1.65E+02	3.42E+02	1.43E+03
Tellurium (52)	Te-117	5.87E+03	1.18E-04	3.17E+03	1.35E+04	9.82E+01	3.19E+02	1.05E+03	4.40E+03
Tellurium (52)	Te-118	4.22E+01	1.64E-02	1.50E+01	9.11E+01	1.39E+01	1.80E+01	8.35E+01	3.51E+02
Tellurium (52)	Te-119	3.78E+02	1.83E-03	3.88E+02	1.75E+03	1.25E+02	2.36E+02	1.45E+02	6.07E+02

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Tellurium (52)	Te-119m	5.38E+01	1.29E-02	2.68E+01	1.24E+02	3.89E+01	6.14E+01	6.22E+00	2.61E+01
Tellurium (52)	Te-121	1.32E+01	5.25E-02	1.53E+01	7.34E+01	5.62E+01	7.84E+01	6.68E+00	2.80E+01
Tellurium (52)	Te-121m	1.64E+00	4.22E-01	8.85E-01	5.31E+00	6.16E+00	7.75E+00	8.65E-01	3.63E+00
Tellurium (52)	Te-123	1.16E-15	6.00E+14	1.52E+00	9.82E+00	1.11E+01	1.38E+01	2.68E+05	1.13E+06
Tellurium (52)	Te-123m	2.12E+00	3.27E-01	2.47E+00	1.75E+01	4.59E+00	5.70E+00	5.24E+00	2.20E+01
Tellurium (52)	Te-125m	4.41E+00	1.57E-01	7.83E+00	6.17E+01	9.67E+00	1.20E+01	5.29E+01	2.22E+02
Tellurium (52)	Te-127	6.49E+02	1.07E-03	5.72E+03	4.18E+04	2.60E+02	3.25E+02	2.32E+06	9.74E+06
Tellurium (52)	Te-127m	2.32E+00	2.99E-01	1.58E+00	1.33E+01	3.98E+00	4.93E+00	2.81E+02	1.18E+03
Tellurium (52)	Te-129	5.23E+03	1.32E-04	3.12E+04	1.47E+05	4.04E-01	5.00E-01	5.88E+04	2.47E+05
Tellurium (52)	Te-129m	7.53E+00	9.21E-02	3.67E+00	2.89E+01	3.74E-01	4.63E-01	7.27E+01	3.05E+02
Tellurium (52)	Te-131	1.46E+04	4.76E-05	1.02E+03	8.47E+03	1.65E+00	2.06E+00	1.61E+04	6.76E+04
Tellurium (52)	Te-131m	2.02E+02	3.42E-03	1.18E+01	8.96E+01	1.47E+00	1.84E+00	2.73E+01	1.15E+02
Tellurium (52)	Te-132	7.89E+01	8.78E-03	1.51E+01	8.38E+01	5.78E+00	7.55E+00	6.42E+00	2.70E+01
Tellurium (52)	Te-133	2.91E+04	2.38E-05	7.95E+03	5.82E+04	7.31E+00	9.52E+00	2.31E+04	9.71E+04
Tellurium (52)	Te-133m	6.57E+03	1.05E-04	1.09E+03	6.29E+03	6.83E+00	9.08E+00	6.14E+02	2.58E+03
Tellurium (52)	Te-134	8.71E+03	7.95E-05	2.27E+03	9.69E+03	4.20E+01	1.11E+02	4.89E+02	2.05E+03
Thorium (90)	Th-223	3.64E+07	1.90E-08	6.64E+32	2.79E+33	8.49E+02	3.56E+03	4.42E+32	1.86E+33
Thorium (90)	Th-224	2.08E+07	3.33E-08	3.82E+32	1.61E+33	7.56E+03	3.17E+04	1.21E+33	5.10E+33
Thorium (90)	Th-226	1.19E+04	5.82E-05	3.34E+02	2.87E+03	3.99E-03	4.95E-03	1.52E+08	6.39E+08
Thorium (90)	Th-227	1.35E+01	5.12E-02	1.31E-01	1.59E+00	2.12E-03	2.62E-03	1.44E+01	6.05E+01
Thorium (90)	Th-228	3.63E-01	1.91E+00	1.06E-02	1.08E-01	9.23E-04	1.14E-03	2.38E-01	9.99E-01
Thorium (90)	Th-229	9.44E-05	7.34E+03	2.51E-03	2.09E-02	4.68E-04	5.80E-04	1.15E+00	4.82E+00
Thorium (90)	Th-230	9.19E-06	7.54E+04	7.05E-04	6.03E-03	3.49E-04	4.32E-04	2.66E-01	1.12E+00
Thorium (90)	Th-231	2.38E+02	2.91E-03	1.05E+03	7.98E+03	1.38E-04	1.71E-04	4.52E+03	1.90E+04
Thorium (90)	Th-232	4.93E-11	1.41E+10	1.06E-03	1.24E-02	4.85E-04	6.01E-04	1.23E-01	5.15E-01
Thorium (90)	Th-233	1.63E+04	4.24E-05	2.01E+04	1.29E+05	4.22E-04	5.23E-04	1.89E+04	7.92E+04
Thorium (90)	Th-234	1.05E+01	6.60E-02	4.75E+00	3.67E+01	3.22E-04	4.00E-04	3.13E+02	1.31E+03
Thorium (90)	Th-235	5.13E+04	1.35E-05	9.50E+10	7.24E+11	1.34E-04	1.66E-04	6.84E+11	2.87E+12
Thorium (90)	Th-236	9.71E+03	7.13E-05	8.45E+03	3.63E+04	4.39E-04	5.44E-04	3.42E+03	1.43E+04
Titanium (22)	Ti-44	1.16E-02	6.00E+01	1.69E-01	9.59E-01	3.26E-01	4.05E-01	2.21E-01	9.29E-01
Titanium (22)	Ti-45	1.97E+03	3.52E-04	1.86E+03	8.13E+03	1.45E+02	3.23E+02	4.06E+04	1.71E+05
Titanium (22)	Ti-51	6.32E+04	1.10E-05	4.11E+16	1.73E+17	5.22E+02	2.19E+03	2.27E+16	9.53E+16

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Titanium (22)	Ti-52	2.14E+05	3.23E-06	6.06E+16	2.54E+17	1.17E+02	4.92E+02	3.78E+16	1.59E+17
Thallium (81)	Tl-190	1.40E+05	4.95E-06	5.86E+04	2.47E+05	4.32E-03	5.36E-03	9.20E+03	3.86E+04
Thallium (81)	Tl-190m	9.84E+04	7.04E-06	4.12E+04	1.74E+05	4.32E-03	5.36E-03	6.47E+03	2.72E+04
Thallium (81)	Tl-194	1.10E+04	6.28E-05	1.04E+04	4.40E+04	1.72E+00	2.16E+00	2.78E+03	1.17E+04
Thallium (81)	Tl-194m	1.11E+04	6.24E-05	4.07E+03	1.72E+04	1.70E+00	2.15E+00	3.89E+02	1.64E+03
Thallium (81)	Tl-195	5.23E+03	1.32E-04	3.08E+03	1.37E+04	1.08E+01	1.43E+01	5.97E+02	2.51E+03
Thallium (81)	Tl-196	3.30E+03	2.10E-04	1.69E+03	7.13E+03	9.15E+01	3.11E+02	2.94E+02	1.23E+03
Thallium (81)	Tl-197	2.14E+03	3.24E-04	3.04E+03	1.43E+04	8.37E+00	1.05E+01	8.17E+02	3.43E+03
Thallium (81)	Tl-198	1.15E+03	6.05E-04	5.51E+02	2.33E+03	7.86E+01	2.37E+02	8.73E+01	3.66E+02
Thallium (81)	Tl-198m	3.25E+03	2.13E-04	1.43E+03	6.05E+03	7.29E+01	2.05E+02	2.02E+02	8.50E+02
Thallium (81)	Tl-199	8.18E+02	8.47E-04	3.01E+03	1.30E+04	4.02E+02	7.41E+02	6.54E+02	2.75E+03
Thallium (81)	Tl-200	2.33E+02	2.98E-03	1.58E+02	6.83E+02	8.62E+01	1.80E+02	2.75E+01	1.16E+02
Thallium (81)	Tl-201	8.33E+01	8.32E-03	5.74E+02	2.91E+03	1.85E+02	2.41E+02	2.13E+02	8.93E+02
Thallium (81)	Tl-202	2.07E+01	3.35E-02	2.80E+01	1.37E+02	7.84E+01	1.11E+02	9.08E+00	3.81E+01
Thallium (81)	Tl-204	1.83E-01	3.78E+00	1.51E+00	1.19E+01	2.13E+00	2.64E+00	1.22E+03	5.14E+03
Thallium (81)	Tl-206	8.67E+04	7.99E-06	1.88E+17	7.88E+17	2.25E+04	9.45E+04	5.72E+19	2.40E+20
Thallium (81)	Tl-206m	9.74E+04	7.12E-06	1.48E+16	6.21E+16	8.16E+01	3.43E+02	3.35E+15	1.41E+16
Thallium (81)	Tl-207	7.64E+04	9.08E-06	1.89E+17	7.96E+17	1.94E+04	8.14E+04	4.24E+19	1.78E+20
Thallium (81)	Tl-208	1.19E+05	5.81E-06	4.21E+16	1.77E+17	5.32E+01	2.23E+02	1.09E+16	4.58E+16
Thallium (81)	Tl-209	1.69E+05	4.11E-06	4.65E+06	3.37E+07	7.67E+01	2.49E+02	7.05E+16	2.96E+17
Thallium (81)	Tl-210	2.80E+05	2.47E-06	7.86E+03	6.76E+04	4.02E-03	4.98E-03	3.59E+09	1.51E+10
Thulium (69)	Tm-161	1.21E+04	5.75E-05	1.05E+04	4.52E+04	7.08E+01	2.12E+02	2.21E+03	9.27E+03
Thulium (69)	Tm-162	1.68E+04	4.13E-05	2.23E+10	9.41E+10	9.27E+01	3.47E+02	5.01E+09	2.10E+10
Thulium (69)	Tm-163	3.35E+03	2.07E-04	2.37E+03	1.01E+04	6.94E+01	1.30E+02	3.21E+02	1.35E+03
Thulium (69)	Tm-164	1.82E+05	3.81E-06	1.47E+18	6.19E+18	2.50E+02	1.05E+03	6.30E+17	2.65E+18
Thulium (69)	Tm-165	2.02E+02	3.43E-03	2.41E+02	1.14E+03	1.07E+02	1.69E+02	5.53E+01	2.32E+02
Thulium (69)	Tm-166	7.88E+02	8.79E-04	3.64E+02	1.58E+03	6.49E+01	1.54E+02	5.83E+01	2.45E+02
Thulium (69)	Tm-167	2.73E+01	2.53E-02	5.48E+01	3.46E+02	2.91E+01	3.66E+01	4.23E+01	1.78E+02
Thulium (69)	Tm-168	2.72E+00	2.55E-01	1.53E+00	7.46E+00	7.43E+00	9.52E+00	2.94E-01	1.23E+00
Thulium (69)	Tm-170	1.97E+00	3.52E-01	2.76E+00	2.18E+01	4.32E+00	5.35E+00	3.30E+02	1.38E+03
Thulium (69)	Tm-171	3.61E-01	1.92E+00	1.80E+01	1.48E+02	3.14E+01	3.89E+01	5.21E+04	2.19E+05
Thulium (69)	Tm-172	9.55E+01	7.26E-03	6.08E+01	3.72E+02	2.85E+01	3.72E+01	1.26E+02	5.31E+02

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Thulium (69)	Tm-173	7.37E+02	9.41E-04	1.20E+03	5.87E+03	1.41E+02	2.16E+02	8.80E+02	3.70E+03
Thulium (69)	Tm-174	6.75E+04	1.03E-05	1.65E+15	6.93E+15	1.11E+02	4.66E+02	1.93E+14	8.11E+14
Thulium (69)	Tm-175	2.40E+04	2.89E-05	7.76E+04	5.60E+05	4.02E+01	5.96E+01	1.64E+06	6.89E+06
Thulium (69)	Tm-176	1.97E+05	3.52E-06	7.21E+18	3.03E+19	9.51E+01	3.99E+02	1.17E+18	4.93E+18
Uranium (92)	U-227	3.31E+05	2.09E-06	2.03E+20	8.54E+20	5.81E+02	2.44E+03	9.30E+19	3.91E+20
Uranium (92)	U-228	4.00E+04	1.73E-05	2.52E+16	1.06E+17	6.81E+03	2.86E+04	7.66E+16	3.22E+17
Uranium (92)	U-230	1.22E+01	5.70E-02	2.18E-01	1.75E+00	1.53E-03	1.90E-03	2.66E+03	1.12E+04
Uranium (92)	U-231	6.02E+01	1.15E-02	2.08E+02	1.36E+03	1.38E-04	1.71E-04	1.39E+02	5.84E+02
Uranium (92)	U-232	1.01E-02	6.89E+01	3.76E-03	3.03E-02	5.06E-04	6.27E-04	2.20E-01	9.23E-01
Uranium (92)	U-233	4.35E-06	1.59E+05	2.73E-03	2.25E-02	4.22E-04	5.23E-04	1.33E+00	5.59E+00
Uranium (92)	U-234	2.82E-06	2.46E+05	1.08E-03	9.18E-03	3.22E-04	4.00E-04	4.12E-01	1.73E+00
Uranium (92)	U-235	9.84E-10	7.04E+08	1.82E-03	1.39E-02	1.34E-04	1.66E-04	6.60E-01	2.77E+00
Uranium (92)	U-235m	1.40E+04	4.95E-05	2.60E+10	1.98E+11	1.34E-04	1.66E-04		
Uranium (92)	U-236	2.96E-08	2.34E+07	4.13E-02	2.87E-01	4.39E-04	5.44E-04	7.44E+01	3.13E+02
Uranium (92)	U-237	3.75E+01	1.85E-02	6.18E+01	4.12E+02	3.76E-04	4.66E-04	5.32E+01	2.24E+02
Uranium (92)	U-238	1.55E-10	4.47E+09	6.28E-04	5.34E-03	3.03E-04	3.75E-04	2.42E-01	1.02E+00
Uranium (92)	U-239	1.55E+04	4.46E-05	2.30E+04	1.48E+05	9.77E-05	1.21E-04	1.82E+04	7.64E+04
Uranium (92)	U-240	4.31E+02	1.61E-03	3.90E+02	2.32E+03	1.98E-04	2.45E-04	5.78E+02	2.43E+03
Uranium (92)	U-242	2.17E+04	3.20E-05	9.68E+07	6.56E+08	1.68E-04	2.09E-04	5.85E+12	2.46E+13
Vanadium (23)	V-47	1.12E+04	6.20E-05	9.21E+03	3.92E+04	1.70E+02	5.33E+02	3.97E+05	1.67E+06
Vanadium (23)	V-48	1.58E+01	4.38E-02	3.81E+00	1.82E+01	1.16E+01	1.64E+01	1.46E+00	6.14E+00
Vanadium (23)	V-49	7.67E-01	9.04E-01	1.28E+02	1.04E+03	5.47E+02	6.78E+02		
Vanadium (23)	V-50	4.62E-18	1.50E+17	3.23E-01	1.68E+00	6.49E-01	8.07E-01	3.75E-01	1.57E+00
Vanadium (23)	V-52	9.73E+04	7.12E-06	4.95E+16	2.08E+17	1.27E+02	5.32E+02	3.11E+16	1.30E+17
Vanadium (23)	V-53	2.26E+05	3.06E-06	3.84E+18	1.61E+19	1.81E+02	7.61E+02	2.27E+18	9.55E+18
Tungsten (74)	W-177	2.76E+03	2.51E-04	2.47E+03	1.08E+04	1.15E+02	2.30E+02	2.82E+02	1.18E+03
Tungsten (74)	W-178	1.17E+01	5.92E-02	4.16E+01	2.29E+02	4.57E+01	5.77E+01	2.73E+01	1.14E+02
Tungsten (74)	W-179	9.83E+03	7.05E-05	1.37E+05	6.31E+05	7.82E+01	9.82E+01	4.67E+04	1.96E+05
Tungsten (74)	W-179m	5.69E+04	1.22E-05	7.96E+05	3.66E+06	7.68E+01	9.76E+01	2.71E+05	1.14E+06
Tungsten (74)	W-181	2.09E+00	3.32E-01	2.70E+01	1.53E+02	1.32E+02	1.65E+02	2.46E+01	1.03E+02
Tungsten (74)	W-185	3.37E+00	2.06E-01	1.30E+01	1.05E+02	1.03E+01	1.27E+01	9.07E+06	3.81E+07
Tungsten (74)	W-185m	2.28E+05	3.04E-06	8.80E+05	7.10E+06	1.03E+01	1.27E+01	6.14E+11	2.58E+12

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Tungsten (74)	W-187	2.56E+02	2.71E-03	3.02E+02	1.58E+03	7.00E+01	9.75E+01	2.04E+02	8.58E+02
Tungsten (74)	W-188	3.62E+00	1.91E-01	1.63E+00	1.25E+01	2.44E+00	3.02E+00	3.24E+01	1.36E+02
Tungsten (74)	W-190	1.21E+04	5.71E-05	1.33E+08	5.67E+08	1.07E+02	2.99E+02	2.47E+07	1.04E+08
Xenon (54)	Xe-120	9.11E+03	7.61E-05	2.66E+03	1.15E+04	4.24E+01	1.02E+02	8.54E+02	3.59E+03
Xenon (54)	Xe-121	9.08E+03	7.63E-05	3.13E+03	1.38E+04	3.33E+01	5.83E+01	1.07E+03	4.49E+03
Xenon (54)	Xe-122	3.02E+02	2.29E-03	2.45E+02	1.03E+03	1.94E+02	8.14E+02	3.02E+02	1.27E+03
Xenon (54)	Xe-123	2.92E+03	2.37E-04	2.92E+03	1.33E+04	9.95E+00	1.27E+01	9.20E+02	3.86E+03
Xenon (54)	Xe-125	3.59E+02	1.93E-03	4.20E+01	2.95E+02	2.64E+00	3.27E+00	2.65E+02	1.11E+03
Xenon (54)	Xe-127	6.95E+00	9.97E-02	2.42E+01	1.02E+02	7.90E+02	3.32E+03	5.44E+00	2.28E+01
Xenon (54)	Xe-127m	3.16E+05	2.19E-06	1.10E+06	4.63E+06	5.00E+02	2.10E+03	2.47E+05	1.04E+06
Xenon (54)	Xe-129m	2.85E+01	2.43E-02	6.10E+02	2.56E+03	9.73E+03	4.09E+04	1.87E+02	7.83E+02
Xenon (54)	Xe-131m	2.14E+01	3.24E-02	1.17E+03	4.91E+03	2.50E+04	1.05E+05	8.44E+02	3.54E+03
Xenon (54)	Xe-133	4.82E+01	1.44E-02	1.06E+03	4.45E+03	6.52E+03	2.74E+04	4.88E+02	2.05E+03
Xenon (54)	Xe-133m	1.16E+02	6.00E-03	1.36E+03	5.70E+03	3.36E+03	1.41E+04	7.24E+02	3.04E+03
Xenon (54)	Xe-135	6.64E+02	1.04E-03	2.37E+03	9.96E+03	3.48E+00	4.32E+00	1.27E+03	5.31E+03
Xenon (54)	Xe-135m	2.38E+04	2.91E-05	8.55E+04	3.59E+05	3.45E+00	4.31E+00	4.57E+04	1.92E+05
Xenon (54)	Xe-137	9.54E+04	7.26E-06	6.46E+05	3.61E+06	1.04E+00	1.29E+00	4.36E+06	1.83E+07
Xenon (54)	Xe-138	2.59E+04	2.68E-05	9.99E+03	4.24E+04	4.94E+01	1.81E+02	3.23E+03	1.36E+04
Yttrium (39)	Y-81	3.10E+05	2.23E-06	4.41E+05	1.89E+06	5.28E+01	1.64E+02	2.41E+05	1.01E+06
Yttrium (39)	Y-83	5.14E+04	1.35E-05	2.02E+04	1.05E+05	1.69E+01	2.50E+01	1.15E+04	4.84E+04
Yttrium (39)	Y-83m	1.28E+05	5.42E-06	5.01E+04	2.61E+05	1.69E+01	2.50E+01	2.86E+04	1.20E+05
Yttrium (39)	Y-84m	9.22E+03	7.52E-05	2.09E+03	8.87E+03	4.48E+01	1.59E+02	4.00E+02	1.68E+03
Yttrium (39)	Y-85	2.27E+03	3.06E-04	9.83E+02	4.53E+03	3.37E+01	5.25E+01	5.80E+02	2.44E+03
Yttrium (39)	Y-85m	1.25E+03	5.55E-04	4.93E+02	2.33E+03	2.85E+01	4.35E+01	2.88E+02	1.21E+03
Yttrium (39)	Y-86	4.12E+02	1.68E-03	9.69E+01	4.31E+02	3.14E+01	6.66E+01	1.80E+01	7.55E+01
Yttrium (39)	Y-86m	7.59E+03	9.13E-05	1.69E+03	7.54E+03	2.99E+01	6.33E+01	3.27E+02	1.37E+03
Yttrium (39)	Y-87	7.61E+01	9.11E-03	6.66E+01	3.22E+02	6.20E+01	9.19E+01	3.89E+01	1.63E+02
Yttrium (39)	Y-87m	4.54E+02	1.53E-03	2.88E+02	1.39E+03	4.72E+01	7.07E+01	1.85E+02	7.77E+02
Yttrium (39)	Y-88	2.37E+00	2.92E-01	7.66E-01	3.53E+00	5.80E+00	7.64E+00	2.10E-01	8.83E-01
Yttrium (39)	Y-89m	1.40E+06	4.97E-07	3.76E+23	1.58E+24	2.15E+02	9.02E+02	2.32E+23	9.75E+23
Yttrium (39)	Y-90	9.47E+01	7.32E-03	5.38E+01	4.12E+02	2.46E+01	3.05E+01	4.43E+06	1.86E+07
Yttrium (39)	Y-90m	1.90E+03	3.64E-04	7.50E+02	4.72E+03	2.15E+01	2.80E+01	7.69E+02	3.23E+03

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident Dust Total BDCC DL=1	Indoor Worker Dust Total BDCC DL=1	Resident Air Total BDCC (no decay) DL=1	Indoor Worker Air Total BDCC (no decay) DL=1	Resident 3-D Ground Plane BDCC DL=1	Indoor Worker 3-D Ground Plane BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/m ³)	(pCi/m ³)	(pCi/cm ²)	(pCi/cm ²)
Yttrium (39)	Y-91	4.32E+00	1.60E-01	2.86E+00	2.22E+01	4.40E+00	5.45E+00	1.26E+04	5.29E+04
Yttrium (39)	Y-91m	7.33E+03	9.46E-05	3.51E+03	2.21E+04	4.34E+00	5.43E+00	8.26E+03	3.47E+04
Yttrium (39)	Y-92	1.71E+03	4.04E-04	2.35E+03	1.23E+04	1.56E+02	2.31E+02	9.34E+03	3.92E+04
Yttrium (39)	Y-93	5.96E+02	1.16E-03	6.27E+02	4.12E+03	1.77E+00	2.20E+00	1.06E+04	4.44E+04
Yttrium (39)	Y-94	1.95E+04	3.56E-05	8.25E+11	3.54E+12	1.99E+02	6.15E+02	6.85E+11	2.88E+12
Yttrium (39)	Y-95	3.54E+04	1.96E-05	1.46E+04	7.34E+04	4.82E+00	6.27E+00	1.49E+04	6.25E+04
Ytterbium (70)	Yb-162	1.93E+04	3.59E-05	3.55E+09	1.50E+10	8.08E+01	2.83E+02	7.97E+08	3.35E+09
Ytterbium (70)	Yb-163	3.30E+04	2.10E-05	2.33E+04	9.88E+04	5.46E+01	1.14E+02	3.15E+03	1.32E+04
Ytterbium (70)	Yb-164	4.81E+03	1.44E-04	4.87E+03	2.10E+04	1.85E+02	5.06E+02	2.19E+03	9.21E+03
Ytterbium (70)	Yb-165	3.68E+04	1.88E-05	4.36E+04	2.07E+05	9.22E+01	1.59E+02	1.00E+04	4.21E+04
Ytterbium (70)	Yb-166	1.07E+02	6.47E-03	3.83E+01	1.81E+02	2.77E+01	4.34E+01	7.68E+00	3.23E+01
Ytterbium (70)	Yb-167	2.08E+04	3.33E-05	4.17E+04	2.63E+05	2.81E+01	3.60E+01	3.22E+04	1.35E+05
Ytterbium (70)	Yb-169	7.90E+00	8.77E-02	9.67E+00	5.64E+01	1.14E+01	1.43E+01	2.27E+00	9.55E+00
Ytterbium (70)	Yb-175	6.04E+01	1.15E-02	1.96E+02	1.42E+03	5.32E+01	6.64E+01	4.14E+03	1.74E+04
Ytterbium (70)	Yb-177	3.18E+03	2.18E-04	4.78E+03	2.77E+04	3.00E+01	3.81E+01	9.02E+03	3.79E+04
Ytterbium (70)	Yb-178	4.92E+03	1.41E-04	1.35E+04	6.48E+04	2.80E+02	4.24E+02	2.97E+04	1.25E+05
Ytterbium (70)	Yb-179	4.55E+04	1.52E-05	2.06E+05	1.22E+06	1.24E+02	2.76E+02	1.67E+06	7.03E+06
Zinc (30)	Zn-60	1.53E+05	4.53E-06	1.95E+10	8.22E+10	3.36E+01	1.31E+02	6.12E+09	2.57E+10
Zinc (30)	Zn-61	2.45E+05	2.83E-06	2.49E+05	1.08E+06	6.99E+01	2.18E+02	2.43E+05	1.02E+06
Zinc (30)	Zn-62	6.61E+02	1.05E-03	2.93E+02	1.38E+03	4.46E+01	7.19E+01	4.53E+02	1.90E+03
Zinc (30)	Zn-63	9.47E+03	7.32E-05	7.03E+03	3.00E+04	1.51E+02	4.65E+02	2.02E+04	8.49E+04
Zinc (30)	Zn-65	1.04E+00	6.69E-01	5.92E-01	3.68E+00	1.62E+01	2.08E+01	1.28E+00	5.39E+00
Zinc (30)	Zn-69	6.46E+03	1.07E-04	1.55E+05	8.19E+05	1.31E+03	1.66E+03	1.07E+10	4.49E+10
Zinc (30)	Zn-69m	4.41E+02	1.57E-03	6.49E+02	3.17E+03	9.78E+01	1.42E+02	6.13E+02	2.58E+03
Zinc (30)	Zn-71	1.49E+05	4.66E-06	9.98E+17	4.19E+18	5.88E+02	2.47E+03	1.15E+18	4.81E+18
Zinc (30)	Zn-71m	1.53E+03	4.52E-04	8.23E+02	3.57E+03	8.08E+01	1.82E+02	1.81E+02	7.62E+02
Zinc (30)	Zn-72	1.31E+02	5.31E-03	2.98E+01	1.47E+02	1.51E+01	2.23E+01	1.26E+01	5.29E+01
Zirconium (40)	Zr-85	4.63E+04	1.50E-05	1.83E+04	8.64E+04	2.35E+01	4.06E+01	1.07E+04	4.50E+04
Zirconium (40)	Zr-86	3.68E+02	1.88E-03	7.31E+01	3.38E+02	2.21E+01	3.99E+01	1.51E+01	6.33E+01
Zirconium (40)	Zr-87	3.61E+03	1.92E-04	1.30E+03	6.01E+03	3.52E+01	5.80E+01	1.26E+03	5.28E+03
Zirconium (40)	Zr-88	3.03E+00	2.28E-01	9.60E-01	4.49E+00	3.76E+00	4.87E+00	2.88E-01	1.21E+00
Zirconium (40)	Zr-89	7.74E+01	8.95E-03	4.60E+01	2.20E+02	4.82E+01	7.47E+01	2.26E+01	9.51E+01

Summary BDCCs October 2024									
Radionuclide		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)					
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Resident	Indoor Worker	Resident	Indoor Worker	Resident	Indoor Worker
				Dust Total BDCC DL=1 (pCi/cm ²)	Dust Total BDCC DL=1 (pCi/cm ²)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	Air Total BDCC (no decay) DL=1 (pCi/m ³)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)	3-D Ground Plane BDCC DL=1 (pCi/cm ²)
Zirconium (40)	Zr-89m	8.75E+04	7.92E-06	5.54E+04	2.65E+05	4.41E+01	7.51E+01	2.73E+04	1.15E+05
Zirconium (40)	Zr-93	4.53E-07	1.53E+06	1.92E+00	1.12E+01	1.81E+00	2.25E+00		
Zirconium (40)	Zr-95	3.95E+00	1.75E-01	1.64E+00	8.20E+00	4.98E+00	6.35E+00	1.66E+00	6.98E+00
Zirconium (40)	Zr-97	3.63E+02	1.91E-03	1.18E+02	6.18E+02	2.78E+01	4.08E+01	1.17E+02	4.93E+02

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Actinium (89)	Ac-223	1.73E+05	4.00E-06		1.36E+17	1.36E+17	1.00E-08	3.39E-01
Actinium (89)	Ac-224	2.18E+03	3.17E-04	3.89E+01	1.25E+03	3.77E+01	1.00E-08	7.50E-15
Actinium (89)	Ac-225	2.53E+01	2.74E-02	1.09E+00	9.05E+01	1.07E+00	1.00E-08	1.85E-14
Actinium (89)	Ac-226	2.07E+02	3.35E-03	6.98E+00	1.21E+03	6.98E+00	1.62E+00	1.48E-14
Actinium (89)	Ac-227	3.18E-02	2.18E+01	3.71E-03	1.81E+00	3.71E-03	2.44E-01	5.13E-14
Actinium (89)	Ac-228	9.87E+02	7.02E-04	2.91E+01	7.06E+02	2.79E+01	1.00E-08	1.25E-14
Actinium (89)	Ac-230	1.79E+05	3.87E-06	1.38E+07	1.11E+10	1.37E+07	8.85E+03	3.42E-11
Actinium (89)	Ac-231	4.86E+04	1.43E-05	2.31E+05	2.84E+06	2.14E+05	1.00E-08	1.97E-12
Actinium (89)	Ac-232	1.84E+05	3.77E-06	3.95E+12	1.51E+15	3.94E+12	1.76E+02	9.65E-06
Actinium (89)	Ac-233	1.51E+05	4.60E-06	2.58E+05	6.66E+05	1.86E+05	1.00E-08	5.58E-13
Silver (47)	Ag-100m	1.63E+05	4.26E-06	1.81E+05	5.67E+04	4.32E+04	1.00E-08	5.15E-14
Silver (47)	Ag-101	3.28E+04	2.11E-05	1.85E+05	4.98E+04	3.92E+04	1.00E-08	2.34E-13
Silver (47)	Ag-102	2.82E+04	2.45E-05	5.01E+14	3.27E+12	3.25E+12	1.00E-08	2.28E-05
Silver (47)	Ag-102m	4.73E+04	1.46E-05	7.10E+14	4.53E+12	4.51E+12	1.00E-08	1.89E-05
Silver (47)	Ag-103	5.54E+03	1.25E-04	3.94E+04	6.08E+03	5.27E+03	1.00E-08	1.90E-13
Silver (47)	Ag-104	5.26E+03	1.32E-04	1.56E+05	1.85E+03	1.83E+03	1.00E-08	7.01E-14
Silver (47)	Ag-104m	1.09E+04	6.37E-05	2.81E+05	5.58E+03	5.47E+03	1.00E-08	1.01E-13
Silver (47)	Ag-105	6.13E+00	1.13E-01	2.35E+01	1.15E+01	7.70E+00	1.00E-08	2.56E-13
Silver (47)	Ag-105m	5.04E+04	1.38E-05	1.94E+05	9.46E+04	6.35E+04	1.00E-08	2.57E-13
Silver (47)	Ag-106	1.52E+04	4.56E-05	4.01E+11	9.16E+09	8.95E+09	1.00E-08	1.21E-07
Silver (47)	Ag-106m	3.05E+01	2.27E-02	3.77E+01	1.04E+01	8.13E+00	1.00E-08	5.47E-14
Silver (47)	Ag-108	1.54E+05	4.51E-06		1.16E+19	1.16E+19	1.00E-08	1.59E+01
Silver (47)	Ag-108m	1.66E-03	4.18E+02	7.67E-01	5.77E-01	3.29E-01	1.00E-08	4.16E-11
Silver (47)	Ag-109m	5.52E+05	1.26E-06		1.41E+23	1.41E+23	1.00E-08	5.39E+04
Silver (47)	Ag-110	8.88E+05	7.80E-07		1.19E+23	1.19E+23	1.00E-08	2.86E+04
Silver (47)	Ag-110m	1.01E+00	6.84E-01	1.01E+00	5.47E-01	3.55E-01	1.00E-08	7.49E-14
Silver (47)	Ag-111	3.40E+01	2.04E-02	4.44E+01	5.73E+02	4.12E+01	1.00E-08	2.61E-13
Silver (47)	Ag-111m	3.37E+05	2.05E-06	4.44E+05	5.73E+06	4.12E+05	1.00E-08	2.63E-13
Silver (47)	Ag-112	1.94E+03	3.57E-04	7.65E+03	2.24E+03	1.73E+03	1.00E-08	1.94E-13
Silver (47)	Ag-113	1.13E+03	6.13E-04	4.55E+03	6.34E+03	2.65E+03	1.00E-08	5.14E-13
Silver (47)	Ag-113m	3.18E+05	2.18E-06	2.00E+06	2.78E+06	1.16E+06	1.00E-08	8.01E-13
Silver (47)	Ag-114	4.75E+06	1.46E-07		2.30E+27	2.30E+27	1.00E-08	1.07E+08

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	Start Time Total (yrs)	BDCC DL=1 (mg/cm ²)
Silver (47)	Ag-115	1.82E+04	3.81E-05	1.91E+04	4.72E+04	1.36E+04	1.00E-08	1.67E-13
Silver (47)	Ag-116	1.36E+05	5.10E-06		9.53E+16	9.53E+16	1.00E-08	1.58E-01
Silver (47)	Ag-117	2.97E+05	2.33E-06	1.26E+06	1.60E+05	1.42E+05	1.00E-08	1.09E-13
Silver (47)	Ag-99	1.76E+05	3.93E-06	3.74E+06	2.60E+05	2.43E+05	1.00E-08	2.65E-13
Aluminum (13)	Al-26	9.67E-07	7.17E+05	4.92E-01	3.61E-01	2.08E-01	1.00E-08	1.09E-08
Aluminum (13)	Al-28	1.63E+05	4.26E-06		8.08E+17	8.08E+17	1.00E-08	2.70E-01
Aluminum (13)	Al-29	5.55E+04	1.25E-05		5.08E+14	5.08E+14	1.00E-08	5.15E-04
Americium (95)	Am-237	4.99E+03	1.39E-04	6.47E+04	1.17E+04	9.91E+03	1.00E-08	9.13E-13
Americium (95)	Am-238	3.72E+03	1.86E-04	3.98E+03	3.98E+03	1.99E+03	1.00E-08	2.47E-13
Americium (95)	Am-239	5.10E+02	1.36E-03	3.39E+03	2.18E+03	1.33E+03	1.00E-08	1.21E-12
Americium (95)	Am-240	1.20E+02	5.80E-03	3.41E+02	1.11E+02	8.38E+01	1.00E-08	3.26E-13
Americium (95)	Am-241	1.60E-03	4.32E+02	9.50E-03	4.10E+01	9.50E-03	1.00E-08	2.77E-12
Americium (95)	Am-242	3.79E+02	1.83E-03	6.22E+01	2.04E+04	6.20E+01	1.00E-08	7.68E-14
Americium (95)	Am-242m	4.91E-03	1.41E+02	9.27E-03	4.25E+01	9.27E-03	4.59E+01	8.86E-13
Americium (95)	Am-243	9.40E-05	7.37E+03	9.53E-03	4.22E+00	9.51E-03	4.35E-02	4.77E-11
Americium (95)	Am-244	6.01E+02	1.15E-03	2.16E+02	7.10E+02	1.66E+02	1.00E-08	1.31E-13
Americium (95)	Am-244m	1.40E+04	4.95E-05	5.58E+03	5.57E+08	5.58E+03	1.00E-08	1.89E-13
Americium (95)	Am-245	2.96E+03	2.34E-04	6.42E+04	6.44E+04	3.22E+04	1.00E-08	5.16E-12
Americium (95)	Am-246	9.34E+03	7.42E-05	1.76E+05	1.14E+04	1.07E+04	1.00E-08	5.49E-13
Americium (95)	Am-246m	1.46E+04	4.76E-05	9.39E+05	3.01E+09	9.38E+05	1.00E-08	3.07E-11
Americium (95)	Am-247	1.58E+04	4.38E-05	1.09E+09	7.40E+10	1.09E+09	2.09E+05	3.29E-08
Argon (18)	Ar-37	7.22E+00	9.60E-02					
Argon (18)	Ar-39	2.58E-03	2.69E+02		3.94E+02	3.94E+02	1.00E-08	1.16E-08
Argon (18)	Ar-41	3.32E+03	2.09E-04		2.43E+03	2.43E+03	1.00E-08	5.82E-14
Argon (18)	Ar-42	2.11E-02	3.29E+01	3.88E+00	2.23E+00	1.42E+00	7.87E-03	5.48E-12
Argon (18)	Ar-43	6.78E+04	1.02E-05	4.77E+05	6.45E+04	5.68E+04	1.00E-08	6.99E-14
Argon (18)	Ar-44	3.07E+04	2.26E-05	5.41E+11	1.06E+10	1.04E+10	1.00E-08	2.90E-08
Arsenic (33)	As-68	1.44E+05	4.81E-06	2.94E+05	2.13E+05	1.23E+05	1.00E-08	1.13E-13
Arsenic (33)	As-69	2.39E+04	2.90E-05	2.06E+05	2.36E+04	2.12E+04	1.00E-08	1.19E-13
Arsenic (33)	As-70	6.92E+03	1.00E-04	8.89E+04	1.53E+03	1.50E+03	1.00E-08	2.95E-14
Arsenic (33)	As-71	9.30E+01	7.45E-03	3.49E+02	1.53E+02	1.06E+02	1.00E-08	1.57E-13
Arsenic (33)	As-72	2.33E+02	2.97E-03	2.18E+02	1.16E+02	7.56E+01	1.00E-08	4.52E-14

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Arsenic (33)	As-73	3.15E+00	2.20E-01	2.12E+01	5.71E+02	2.04E+01	1.00E-08	9.19E-13
Arsenic (33)	As-74	1.42E+01	4.87E-02	1.92E+01	1.70E+01	9.01E+00	1.00E-08	9.09E-14
Arsenic (33)	As-76	2.35E+02	2.95E-03	2.51E+02	4.08E+02	1.56E+02	1.00E-08	9.78E-14
Arsenic (33)	As-77	1.56E+02	4.43E-03	6.71E+02	1.05E+04	6.30E+02	1.00E-08	6.02E-13
Arsenic (33)	As-78	4.02E+03	1.73E-04	3.48E+04	2.69E+03	2.50E+03	1.00E-08	9.42E-14
Arsenic (33)	As-79	4.04E+04	1.71E-05	8.31E+09	7.95E+14	8.31E+09	1.00E-08	3.15E-08
Astatine (85)	At-204	3.96E+04	1.75E-05	8.77E+04	9.12E+03	8.26E+03	1.00E-08	8.26E-14
Astatine (85)	At-205	1.39E+04	4.98E-05	2.75E+04	4.20E+03	3.64E+03	1.00E-08	1.04E-13
Astatine (85)	At-206	1.19E+04	5.82E-05	1.03E+03	2.67E+03	7.44E+02	1.00E-08	2.50E-14
Astatine (85)	At-207	3.37E+03	2.05E-04	1.41E+04	9.45E+02	8.85E+02	1.00E-08	1.05E-13
Astatine (85)	At-208	3.72E+03	1.86E-04	1.82E+01	1.17E+03	1.79E+01	1.00E-08	1.94E-15
Astatine (85)	At-209	1.12E+03	6.18E-04	1.73E+02	4.52E+02	1.25E+02	1.00E-08	4.52E-14
Astatine (85)	At-210	7.49E+02	9.25E-04	1.15E+00	2.47E+02	1.15E+00	1.00E-08	6.25E-16
Astatine (85)	At-211	8.42E+02	8.24E-04	1.28E+02	1.57E+04	1.27E+02	1.00E-08	6.20E-14
Astatine (85)	At-215	2.19E+11	3.17E-12		3.00E+23	3.00E+23	1.00E-08	5.72E-01
Astatine (85)	At-216	7.28E+10	9.51E-12	1.91E+13	2.08E+12	1.88E+12	1.00E-08	1.08E-11
Astatine (85)	At-217	6.77E+08	1.02E-09	2.16E+10	1.76E+11	1.92E+10	1.00E-08	1.20E-11
Astatine (85)	At-218	1.46E+07	4.76E-08	4.09E+05	1.14E+10	4.09E+05	1.61E+00	1.19E-14
Astatine (85)	At-219	3.90E+05	1.78E-06					
Astatine (85)	At-220	9.82E+04	7.06E-06	2.07E+04	6.49E+04	1.57E+04	1.00E-08	6.82E-14
Gold (79)	Au-186	3.40E+04	2.04E-05	1.55E+05	1.40E+04	1.28E+04	1.00E-08	1.36E-13
Gold (79)	Au-187	4.34E+04	1.60E-05	3.71E+05	4.38E+04	3.92E+04	1.00E-08	3.28E-13
Gold (79)	Au-190	8.51E+03	8.14E-05	3.56E+05	3.60E+03	3.56E+03	1.00E-08	1.54E-13
Gold (79)	Au-191	1.91E+03	3.63E-04	7.41E+03	2.07E+03	1.62E+03	1.00E-08	3.14E-13
Gold (79)	Au-192	1.23E+03	5.64E-04	1.27E+04	6.34E+02	6.04E+02	1.00E-08	1.83E-13
Gold (79)	Au-193	3.44E+02	2.01E-03	4.53E+03	2.06E+03	1.42E+03	1.00E-08	1.54E-12
Gold (79)	Au-193m	5.60E+06	1.24E-07	7.38E+07	3.36E+07	2.31E+07	1.00E-08	1.54E-12
Gold (79)	Au-194	1.60E+02	4.34E-03	6.99E+02	1.51E+02	1.24E+02	1.00E-08	2.92E-13
Gold (79)	Au-195	1.36E+00	5.10E-01	1.16E+01	2.35E+01	7.79E+00	1.00E-08	2.17E-12
Gold (79)	Au-195m	7.17E+05	9.67E-07	6.14E+06	1.24E+07	4.11E+06	1.00E-08	2.17E-12
Gold (79)	Au-196	4.09E+01	1.69E-02	2.04E+02	8.24E+01	5.87E+01	1.00E-08	5.45E-13
Gold (79)	Au-196m	6.32E+02	1.10E-03	1.46E+03	8.56E+02	5.39E+02	1.00E-08	3.24E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	Start Time Total (yrs)	BDCC DL=1 (mg/cm ²)
Gold (79)	Au-198	9.39E+01	7.38E-03	1.53E+02	2.07E+02	8.78E+01	1.00E-08	3.59E-13
Gold (79)	Au-198m	1.11E+02	6.22E-03	8.40E+01	1.12E+02	4.80E+01	1.00E-08	1.66E-13
Gold (79)	Au-199	8.06E+01	8.60E-03	3.00E+02	8.35E+02	2.20E+02	1.00E-08	1.06E-12
Gold (79)	Au-200	7.53E+03	9.21E-05	1.87E+05	1.99E+04	1.80E+04	1.00E-08	9.29E-13
Gold (79)	Au-200m	3.25E+02	2.13E-03	5.49E+02	1.49E+02	1.17E+02	1.00E-08	1.40E-13
Gold (79)	Au-201	1.40E+04	4.95E-05	1.39E+11	2.46E+10	2.09E+10	1.00E-08	5.82E-07
Gold (79)	Au-202	7.59E+05	9.13E-07		4.82E+22	4.82E+22	1.00E-08	2.49E+04
Barium (56)	Ba-124	3.31E+04	2.09E-05	1.23E+15	2.37E+13	2.32E+13	1.00E-08	1.69E-04
Barium (56)	Ba-126	3.64E+03	1.90E-04	2.45E+04	1.84E+03	1.71E+03	1.00E-08	1.15E-13
Barium (56)	Ba-127	2.87E+04	2.42E-05	2.10E+06	3.86E+04	3.79E+04	1.00E-08	3.25E-13
Barium (56)	Ba-128	1.04E+02	6.66E-03	6.61E+01	9.24E+01	3.85E+01	1.00E-08	9.19E-14
Barium (56)	Ba-129	2.72E+03	2.55E-04	4.47E+04	4.17E+03	3.81E+03	1.00E-08	3.50E-13
Barium (56)	Ba-129m	2.81E+03	2.47E-04	3.90E+04	1.45E+03	1.40E+03	1.00E-08	1.24E-13
Barium (56)	Ba-131	2.20E+01	3.15E-02	7.31E+01	4.24E+01	2.68E+01	1.00E-08	3.10E-13
Barium (56)	Ba-131m	2.49E+04	2.78E-05	8.29E+04	4.80E+04	3.04E+04	1.00E-08	3.10E-13
Barium (56)	Ba-133	6.59E-02	1.05E+01	9.57E-01	2.47E+00	6.90E-01	1.00E-08	2.70E-12
Barium (56)	Ba-133m	1.56E+02	4.44E-03	4.04E+02	1.65E+03	3.24E+02	1.00E-08	5.36E-13
Barium (56)	Ba-135m	2.12E+02	3.28E-03	8.45E+02	3.51E+03	6.81E+02	1.00E-08	8.43E-13
Barium (56)	Ba-137m	1.43E+05	4.86E-06		4.20E+17	4.20E+17	1.00E-08	7.82E-01
Barium (56)	Ba-139	4.39E+03	1.58E-04	6.04E+04	2.63E+04	1.83E+04	1.00E-08	1.13E-12
Barium (56)	Ba-140	1.98E+01	3.49E-02	7.12E+00	7.56E+00	3.67E+00	1.00E-08	5.02E-14
Barium (56)	Ba-141	1.99E+04	3.48E-05	3.03E+04	8.48E+04	2.23E+04	1.00E-08	3.06E-13
Barium (56)	Ba-142	3.44E+04	2.02E-05	3.36E+05	1.42E+04	1.36E+04	1.00E-08	1.09E-13
Beryllium (4)	Be-10	4.59E-07	1.51E+06	1.45E+00	2.88E+02	1.44E+00	1.00E-08	6.09E-08
Beryllium (4)	Be-7	4.75E+00	1.46E-01	3.11E+02	8.99E+01	6.97E+01	1.00E-08	1.99E-13
Bismuth (83)	Bi-197	3.92E+04	1.77E-05	2.25E+05	3.62E+04	3.12E+04	1.00E-08	3.04E-13
Bismuth (83)	Bi-200	1.00E+04	6.93E-05	2.85E+04	2.40E+03	2.22E+03	1.00E-08	8.60E-14
Bismuth (83)	Bi-201	3.37E+03	2.05E-04	1.61E+04	1.19E+03	1.11E+03	1.00E-08	1.28E-13
Bismuth (83)	Bi-202	3.53E+03	1.96E-04	6.32E+04	1.22E+03	1.20E+03	1.00E-08	1.33E-13
Bismuth (83)	Bi-203	5.16E+02	1.34E-03	1.25E+03	1.87E+02	1.63E+02	1.00E-08	1.24E-13
Bismuth (83)	Bi-204	5.41E+02	1.28E-03	1.68E+03	1.66E+02	1.51E+02	1.00E-08	1.11E-13
Bismuth (83)	Bi-205	1.65E+01	4.19E-02	3.25E+01	9.64E+00	7.43E+00	1.00E-08	1.79E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Bismuth (83)	Bi-206	4.05E+01	1.71E-02	3.71E+01	1.19E+01	8.98E+00	1.00E-08	8.86E-14
Bismuth (83)	Bi-207	2.11E-02	3.29E+01	1.38E+00	6.22E-01	4.29E-01	1.00E-08	8.18E-12
Bismuth (83)	Bi-208	1.88E-06	3.68E+05	1.57E+00	4.04E-01	3.21E-01	1.00E-08	6.88E-08
Bismuth (83)	Bi-210	5.05E+01	1.37E-02	7.81E-02	1.28E+03	7.81E-02	3.00E-03	6.30E-16
Bismuth (83)	Bi-210m	2.28E-07	3.04E+06	1.12E-01	2.92E+00	1.08E-01	1.00E-08	1.94E-07
Bismuth (83)	Bi-211	1.70E+05	4.07E-06		2.33E+17	2.33E+17	1.00E-08	5.62E-01
Bismuth (83)	Bi-212	6.02E+03	1.15E-04	3.86E+04	4.41E+03	3.96E+03	1.00E-08	2.71E-13
Bismuth (83)	Bi-212n	5.20E+04	1.33E-05		6.65E+15	6.65E+15	1.00E-08	5.26E-02
Bismuth (83)	Bi-213	7.99E+03	8.67E-05	5.27E+04	3.41E+04	2.07E+04	1.00E-08	1.07E-12
Bismuth (83)	Bi-214	1.83E+04	3.79E-05	5.14E+02	1.43E+07	5.14E+02	1.61E+00	1.17E-14
Bismuth (83)	Bi-215	4.79E+04	1.45E-05	4.13E+05	2.05E+05	1.37E+05	1.00E-08	1.19E-12
Bismuth (83)	Bi-216	1.68E+05	4.13E-06	3.55E+04	1.11E+05	2.69E+04	1.00E-08	6.72E-14
Berkelium (97)	Bk-245	5.12E+01	1.35E-02	1.44E+02	2.22E+02	8.74E+01	1.00E-08	8.11E-13
Berkelium (97)	Bk-246	1.41E+02	4.93E-03	5.15E+02	1.58E+02	1.21E+02	1.00E-08	4.11E-13
Berkelium (97)	Bk-247	5.02E-04	1.38E+03	5.10E-03	6.76E+00	5.10E-03	1.00E-08	4.87E-12
Berkelium (97)	Bk-248m	2.56E+02	2.71E-03	3.02E+01	3.95E+03	3.00E+01	1.00E-08	5.64E-14
Berkelium (97)	Bk-249	7.67E-01	9.04E-01	1.85E+00	1.14E+03	1.85E+00	1.00E-08	1.17E-12
Berkelium (97)	Bk-250	1.89E+03	3.67E-04	3.67E+02	1.98E+03	3.10E+02	1.00E-08	7.95E-14
Berkelium (97)	Bk-251	6.55E+03	1.06E-04	3.69E+04	6.22E+04	2.32E+04	1.00E-08	1.72E-12
Bromine (35)	Br-72	2.78E+05	2.49E-06	5.90E+04	1.36E+05	4.12E+04	1.00E-08	2.07E-14
Bromine (35)	Br-73	1.07E+05	6.47E-06	4.21E+05	9.05E+04	7.45E+04	1.00E-08	9.85E-14
Bromine (35)	Br-74	1.43E+04	4.83E-05	6.12E+10	6.31E+08	6.24E+08	1.00E-08	6.25E-09
Bromine (35)	Br-74m	7.92E+03	8.75E-05	1.02E+05	1.84E+03	1.80E+03	1.00E-08	3.27E-14
Bromine (35)	Br-75	3.77E+03	1.84E-04	2.79E+03	2.22E+03	1.24E+03	1.00E-08	4.78E-14
Bromine (35)	Br-76	3.75E+02	1.85E-03	1.43E+03	1.30E+02	1.19E+02	1.00E-08	4.68E-14
Bromine (35)	Br-76m	1.67E+07	4.15E-08	6.39E+07	5.79E+06	5.31E+06	1.00E-08	4.69E-14
Bromine (35)	Br-77	1.06E+02	6.51E-03	2.00E+03	3.18E+02	2.74E+02	1.00E-08	3.85E-13
Bromine (35)	Br-77m	8.51E+04	8.14E-06	1.60E+06	2.54E+05	2.19E+05	1.00E-08	3.84E-13
Bromine (35)	Br-78	5.64E+04	1.23E-05		6.87E+14	6.87E+14	1.00E-08	1.84E-03
Bromine (35)	Br-80	2.06E+04	3.36E-05	7.60E+13	7.83E+12	7.10E+12	1.00E-08	5.35E-05
Bromine (35)	Br-80m	1.37E+03	5.05E-04	1.58E+04	7.05E+03	4.87E+03	1.00E-08	5.51E-13
Bromine (35)	Br-82	1.72E+02	4.03E-03	5.76E+02	6.19E+01	5.59E+01	1.00E-08	5.17E-14

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Bromine (35)	Br-82m	5.94E+04	1.17E-05	2.03E+05	2.18E+04	1.97E+04	1.00E-08	5.28E-14
Bromine (35)	Br-83	2.53E+03	2.74E-04	9.56E+04	7.75E+04	4.28E+04	1.00E-08	2.73E-12
Bromine (35)	Br-84	1.15E+04	6.05E-05	2.20E+05	6.20E+03	6.03E+03	1.00E-08	8.58E-14
Bromine (35)	Br-84m	6.07E+04	1.14E-05		9.88E+14	9.88E+14	1.00E-08	2.65E-03
Bromine (35)	Br-85	1.26E+05	5.52E-06		7.12E+05	7.12E+05	1.00E-08	9.35E-13
Carbon (6)	C-10	1.14E+06	6.11E-07		5.13E+22	5.13E+22	1.00E-08	8.77E+02
Carbon (6)	C-11	1.79E+04	3.88E-05	1.19E+13	1.62E+11	1.60E+11	1.00E-08	1.91E-07
Carbon (6)	C-14	1.22E-04	5.70E+03	3.57E+00	7.74E+04	3.57E+00	1.00E-08	7.98E-10
Calcium (20)	Ca-41	6.79E-06	1.02E+05	7.64E+00		7.64E+00	1.00E-08	8.94E-08
Calcium (20)	Ca-45	1.55E+00	4.46E-01	4.28E+00	4.65E+04	4.28E+00	1.00E-08	2.41E-13
Calcium (20)	Ca-47	5.58E+01	1.24E-02	4.51E+01	4.56E+01	2.27E+01	1.00E-08	3.71E-14
Calcium (20)	Ca-49	4.18E+04	1.66E-05	8.59E+05	3.69E+05	2.58E+05	1.00E-08	5.87E-13
Cadmium (48)	Cd-101	2.68E+05	2.59E-06	1.50E+06	4.00E+05	3.16E+05	1.00E-08	2.31E-13
Cadmium (48)	Cd-102	6.62E+04	1.05E-05	5.89E+14	3.70E+12	3.68E+12	1.00E-08	1.10E-05
Cadmium (48)	Cd-103	4.99E+04	1.39E-05	3.55E+05	5.47E+04	4.74E+04	1.00E-08	1.90E-13
Cadmium (48)	Cd-104	6.31E+03	1.10E-04	6.44E+04	2.86E+03	2.74E+03	1.00E-08	8.75E-14
Cadmium (48)	Cd-105	6.56E+03	1.06E-04	2.31E+04	3.49E+03	3.03E+03	1.00E-08	9.42E-14
Cadmium (48)	Cd-107	9.34E+02	7.42E-04	2.46E+04	3.66E+04	1.47E+04	1.00E-08	3.27E-12
Cadmium (48)	Cd-109	5.48E-01	1.26E+00	1.17E+00	7.02E+01	1.15E+00	1.00E-08	4.42E-13
Cadmium (48)	Cd-111m	7.51E+03	9.23E-05	9.38E+05	2.58E+04	2.51E+04	1.00E-08	7.19E-13
Cadmium (48)	Cd-113	9.00E-17	7.70E+15	8.59E-02	1.73E+04	8.59E-02	3.30E+00	2.09E+02
Cadmium (48)	Cd-113m	4.91E-02	1.41E+01	9.01E-02	5.14E+02	9.01E-02	1.00E-08	4.02E-13
Cadmium (48)	Cd-115	1.14E+02	6.10E-03	1.27E+02	2.82E+02	8.77E+01	1.00E-08	1.72E-13
Cadmium (48)	Cd-115m	5.67E+00	1.22E-01	2.96E+00	4.98E+01	2.79E+00	1.00E-08	1.10E-13
Cadmium (48)	Cd-117	2.44E+03	2.84E-04	1.00E+04	1.46E+03	1.28E+03	1.00E-08	1.19E-13
Cadmium (48)	Cd-117m	1.81E+03	3.84E-04	9.82E+03	6.44E+02	6.04E+02	1.00E-08	7.59E-14
Cadmium (48)	Cd-118	7.24E+03	9.57E-05	6.55E+04	2.56E+04	1.84E+04	1.00E-08	5.82E-13
Cadmium (48)	Cd-119	1.35E+05	5.12E-06	7.67E+08	1.50E+10	7.30E+08	1.00E-08	1.24E-09
Cadmium (48)	Cd-119m	1.66E+05	4.19E-06	1.41E+08	2.75E+09	1.34E+08	1.00E-08	1.86E-10
Cerium (58)	Ce-130	1.59E+04	4.36E-05	3.95E+11	3.64E+09	3.61E+09	1.00E-08	5.72E-08
Cerium (58)	Ce-131	3.57E+04	1.94E-05	1.11E+05	2.88E+04	2.29E+04	1.00E-08	1.63E-13
Cerium (58)	Ce-132	1.73E+03	4.01E-04	3.98E+03	7.21E+02	6.11E+02	1.00E-08	9.04E-14

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion BDCC DL=1	External Exposure BDCC DL=1	Total BDCC DL=1	Peak Dose Start Time Total	Total BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Cerium (58)	Ce-133	3.76E+03	1.85E-04	2.66E+04	4.63E+03	3.94E+03	1.00E-08	2.71E-13
Cerium (58)	Ce-133m	1.24E+03	5.59E-04	6.00E+03	6.19E+02	5.61E+02	1.00E-08	1.17E-13
Cerium (58)	Ce-134	8.00E+01	8.66E-03	4.98E+01	8.97E+01	3.20E+01	1.00E-08	1.04E-13
Cerium (58)	Ce-135	3.43E+02	2.02E-03	2.06E+03	3.80E+02	3.21E+02	1.00E-08	2.45E-13
Cerium (58)	Ce-137	6.75E+02	1.03E-03	4.27E+04	1.85E+04	1.29E+04	1.00E-08	5.09E-12
Cerium (58)	Ce-137m	1.76E+02	3.93E-03	5.02E+02	1.92E+03	3.98E+02	1.00E-08	6.00E-13
Cerium (58)	Ce-139	1.84E+00	3.77E-01	1.41E+01	1.36E+01	6.93E+00	1.00E-08	1.02E-12
Cerium (58)	Ce-141	7.78E+00	8.91E-02	1.80E+01	9.96E+01	1.52E+01	1.00E-08	5.36E-13
Cerium (58)	Ce-143	1.84E+02	3.77E-03	1.31E+02	5.13E+02	1.05E+02	1.00E-08	1.58E-13
Cerium (58)	Ce-144	8.88E-01	7.81E-01	4.66E-01	7.54E+00	4.39E-01	1.00E-08	1.38E-13
Cerium (58)	Ce-145	1.21E+05	5.73E-06	5.03E+05	1.09E+06	3.44E+05	1.00E-08	8.01E-13
Californium (98)	Cf-244	1.88E+04	3.69E-05	1.29E+03	1.43E+06	1.29E+03	1.00E-08	3.25E-14
Californium (98)	Cf-246	1.70E+02	4.08E-03	1.85E+01	1.39E+05	1.85E+01	1.00E-08	5.20E-14
Californium (98)	Cf-247	1.95E+03	3.55E-04	1.75E+04	2.06E+04	9.45E+03	1.00E-08	2.32E-12
Californium (98)	Cf-248	7.57E-01	9.15E-01	6.44E-02	1.32E+03	6.44E-02	1.00E-08	4.09E-14
Californium (98)	Cf-249	1.97E-03	3.51E+02	5.07E-03	2.90E+00	5.06E-03	1.00E-08	1.24E-12
Californium (98)	Cf-250	5.30E-02	1.31E+01	1.05E-02	9.39E+01	1.05E-02	1.00E-08	9.57E-14
Californium (98)	Cf-251	7.70E-04	9.00E+02	4.97E-03	8.34E+00	4.97E-03	1.00E-08	3.14E-12
Californium (98)	Cf-252	2.62E-01	2.65E+00	1.70E-02	2.35E+00	1.69E-02	1.00E-08	3.15E-14
Californium (98)	Cf-253	1.42E+01	4.88E-02	2.52E+00	4.43E+03	2.52E+00	1.00E-08	8.71E-14
Californium (98)	Cf-254	4.18E+00	1.66E-01	1.59E-02	2.37E-01	1.49E-02	1.00E-08	1.76E-15
Californium (98)	Cf-255	4.29E+03	1.62E-04	7.17E+02	1.91E+05	7.14E+02	1.00E-08	8.25E-14
Chlorine (17)	Cl-34	1.43E+07	4.84E-08		5.01E+29	5.01E+29	1.26E-05	2.31E+09
Chlorine (17)	Cl-34m	1.14E+04	6.09E-05	1.88E+05	5.32E+03	5.17E+03	1.00E-08	3.00E-14
Chlorine (17)	Cl-36	2.30E-06	3.01E+05	1.82E+00	8.04E+01	1.78E+00	1.00E-08	5.41E-08
Chlorine (17)	Cl-38	9.78E+03	7.09E-05	1.42E+05	6.24E+03	5.97E+03	1.00E-08	4.50E-14
Chlorine (17)	Cl-39	6.55E+03	1.06E-04	1.31E+05	4.12E+03	3.99E+03	1.00E-08	4.61E-14
Chlorine (17)	Cl-40	2.70E+05	2.57E-06		3.96E+18	3.96E+18	1.00E-08	1.14E+00
Curium (96)	Cm-238	2.53E+03	2.74E-04	2.34E+03	2.48E+03	1.21E+03	1.00E-08	2.20E-13
Curium (96)	Cm-239	2.09E+03	3.31E-04	1.05E+04	4.25E+03	3.03E+03	1.00E-08	6.71E-13
Curium (96)	Cm-240	9.37E+00	7.40E-02	6.43E-01	7.12E+02	6.43E-01	1.00E-08	3.20E-14
Curium (96)	Cm-241	7.71E+00	8.99E-02	1.11E+01	1.48E+01	6.35E+00	1.00E-08	3.85E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Curium (96)	Cm-242	1.55E+00	4.46E-01	2.17E-01	2.62E+03	2.17E-01	1.00E-08	6.57E-14
Curium (96)	Cm-243	2.38E-02	2.91E+01	1.27E-02	7.65E+00	1.27E-02	1.00E-08	2.51E-13
Curium (96)	Cm-244	3.83E-02	1.81E+01	1.53E-02	1.55E+03	1.53E-02	1.00E-08	1.89E-13
Curium (96)	Cm-245	8.15E-05	8.50E+03	5.41E-03	8.88E+00	5.41E-03	1.53E+03	3.15E-11
Curium (96)	Cm-246	1.46E-04	4.76E+03	9.38E-03	2.31E+02	9.38E-03	1.00E-08	3.07E-11
Curium (96)	Cm-247	4.44E-08	1.56E+07	3.05E-03	1.68E+00	3.05E-03	2.09E+05	3.29E-08
Curium (96)	Cm-248	1.99E-06	3.48E+05	2.50E-03	7.14E-01	2.49E-03	1.00E-08	6.03E-10
Curium (96)	Cm-249	5.68E+03	1.22E-04	1.31E+04	1.53E+05	1.21E+04	1.00E-08	1.03E-12
Curium (96)	Cm-250	8.35E-05	8.30E+03	3.66E-04	6.88E-02	3.64E-04	1.10E+01	2.11E-12
Curium (96)	Cm-251	2.17E+04	3.20E-05	1.22E+05	2.06E+05	7.66E+04	1.00E-08	1.72E-12
Cobalt (27)	Co-54m	2.46E+05	2.82E-06		8.00E+18	8.00E+18	1.00E-08	3.41E+00
Cobalt (27)	Co-55	3.46E+02	2.00E-03	5.62E+02	1.61E+02	1.25E+02	1.00E-08	3.86E-14
Cobalt (27)	Co-56	3.28E+00	2.12E-01	2.24E+00	9.29E-01	6.56E-01	1.00E-08	2.18E-14
Cobalt (27)	Co-57	9.31E-01	7.44E-01	1.11E+01	1.26E+01	5.89E+00	1.00E-08	7.00E-13
Cobalt (27)	Co-58	3.57E+00	1.94E-01	8.22E+00	3.55E+00	2.48E+00	1.00E-08	7.82E-14
Cobalt (27)	Co-58m	6.72E+02	1.03E-03	1.50E+03	6.69E+02	4.62E+02	1.00E-08	7.75E-14
Cobalt (27)	Co-60	1.31E-01	5.27E+00	4.39E-01	4.14E-01	2.13E-01	1.00E-08	1.89E-13
Cobalt (27)	Co-60m	3.48E+04	1.99E-05	1.17E+05	1.10E+05	5.65E+04	1.00E-08	1.89E-13
Cobalt (27)	Co-61	3.68E+03	1.88E-04	8.32E+04	2.41E+04	1.87E+04	1.00E-08	6.02E-13
Cobalt (27)	Co-62	2.43E+05	2.85E-06		9.92E+18	9.92E+18	1.00E-08	4.92E+00
Cobalt (27)	Co-62m	2.62E+04	2.65E-05	4.53E+14	4.51E+12	4.47E+12	1.00E-08	2.05E-05
Chromium (24)	Cr-48	2.82E+02	2.46E-03	2.28E+02	8.07E+01	5.96E+01	1.00E-08	1.97E-14
Chromium (24)	Cr-49	8.61E+03	8.05E-05	2.05E+05	7.18E+03	6.94E+03	1.00E-08	7.66E-14
Chromium (24)	Cr-51	9.13E+00	7.59E-02	4.10E+02	2.73E+02	1.64E+02	1.00E-08	1.77E-12
Chromium (24)	Cr-55	1.04E+05	6.65E-06		4.59E+17	4.59E+17	1.00E-08	4.70E-01
Chromium (24)	Cr-56	6.13E+04	1.13E-05	4.06E+05	3.38E+04	3.12E+04	1.00E-08	5.53E-14
Cesium (55)	Cs-121	1.41E+05	4.92E-06	4.75E+05	5.42E+04	4.86E+04	1.00E-08	8.10E-14
Cesium (55)	Cs-121m	1.79E+05	3.87E-06	6.03E+05	1.73E+05	1.34E+05	1.00E-08	1.76E-13
Cesium (55)	Cs-123	6.19E+04	1.12E-05	4.32E+05	7.24E+04	6.20E+04	1.00E-08	2.39E-13
Cesium (55)	Cs-124	7.10E+05	9.77E-07		3.79E+21	3.79E+21	1.00E-08	1.28E+03
Cesium (55)	Cs-125	8.09E+03	8.56E-05	9.80E+02	7.00E+03	8.59E+02	1.00E-08	2.57E-14
Cesium (55)	Cs-126	2.22E+05	3.12E-06		2.98E+18	2.98E+18	1.00E-08	3.28E+00

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Cesium (55)	Cs-127	9.71E+02	7.13E-04	7.11E+04	1.31E+03	1.28E+03	1.00E-08	3.25E-13
Cesium (55)	Cs-128	1.00E+05	6.93E-06		4.54E+17	4.54E+17	1.00E-08	1.13E+00
Cesium (55)	Cs-129	1.89E+02	3.66E-03	5.71E+03	6.50E+02	5.83E+02	1.00E-08	7.71E-13
Cesium (55)	Cs-130	1.25E+04	5.56E-05	2.32E+10	6.21E+08	6.05E+08	1.00E-08	1.22E-08
Cesium (55)	Cs-130m	1.05E+05	6.58E-06	1.73E+11	4.63E+09	4.51E+09	1.00E-08	1.08E-08
Cesium (55)	Cs-131	2.61E+01	2.65E-02	8.17E+02	1.29E+03	5.01E+02	1.00E-08	4.88E-12
Cesium (55)	Cs-132	3.90E+01	1.78E-02	1.47E+02	5.15E+01	3.81E+01	1.00E-08	2.50E-13
Cesium (55)	Cs-134	3.36E-01	2.06E+00	1.42E-01	7.10E-01	1.19E-01	1.00E-08	9.18E-14
Cesium (55)	Cs-134m	2.09E+03	3.31E-04	8.82E+02	4.20E+03	7.29E+02	1.00E-08	9.07E-14
Cesium (55)	Cs-135	3.01E-07	2.30E+06	8.56E-01	1.96E+04	8.56E-01	1.00E-08	7.44E-07
Cesium (55)	Cs-135m	6.87E+03	1.01E-04	6.56E+05	4.03E+03	4.01E+03	1.00E-08	1.53E-13
Cesium (55)	Cs-136	1.92E+01	3.61E-02	1.26E+01	8.62E+00	5.12E+00	1.00E-08	7.03E-14
Cesium (55)	Cs-137	2.30E-02	3.02E+01	1.72E-01	1.65E+00	1.56E-01	1.00E-08	1.80E-12
Cesium (55)	Cs-138	1.09E+04	6.36E-05	1.93E+05	4.30E+03	4.21E+03	1.00E-08	1.03E-13
Cesium (55)	Cs-138m	1.25E+05	5.54E-06	1.42E+10	3.17E+08	3.10E+08	1.00E-08	6.63E-10
Cesium (55)	Cs-139	3.93E+04	1.76E-05	5.42E+05	2.35E+05	1.64E+05	1.00E-08	1.13E-12
Cesium (55)	Cs-140	3.43E+05	2.02E-06	1.23E+05	1.31E+05	6.34E+04	1.00E-08	5.02E-14
Copper (29)	Cu-57	1.11E+08	6.22E-09	1.85E+08	5.38E+07	4.17E+07	1.00E-08	4.14E-14
Copper (29)	Cu-59	2.68E+05	2.58E-06	1.11E+12	2.36E+15	1.11E+12	1.00E-08	4.74E-07
Copper (29)	Cu-60	1.54E+04	4.51E-05	2.18E+11	2.20E+09	2.17E+09	1.00E-08	1.65E-08
Copper (29)	Cu-61	1.82E+03	3.80E-04	2.76E+04	1.99E+03	1.86E+03	1.00E-08	1.21E-13
Copper (29)	Cu-62	3.77E+04	1.84E-05		8.67E+13	8.67E+13	1.00E-08	2.77E-04
Copper (29)	Cu-64	4.78E+02	1.45E-03	6.80E+03	2.40E+03	1.77E+03	1.00E-08	4.60E-13
Copper (29)	Cu-66	7.11E+04	9.74E-06		1.50E+16	1.50E+16	1.00E-08	2.70E-02
Copper (29)	Cu-67	9.82E+01	7.06E-03	5.10E+02	8.34E+02	3.17E+02	1.00E-08	4.19E-13
Copper (29)	Cu-69	1.28E+05	5.42E-06	6.98E+06	5.46E+06	3.06E+06	1.00E-08	3.21E-12
Dysprosium (66)	Dy-148	1.10E+05	6.28E-06	3.01E+05	4.36E+04	3.81E+04	1.00E-08	9.91E-14
Dysprosium (66)	Dy-149	8.67E+04	7.99E-06	1.85E+05	5.84E+04	4.44E+04	1.00E-08	1.48E-13
Dysprosium (66)	Dy-150	5.08E+04	1.36E-05	9.80E+04	1.97E+04	1.64E+04	1.00E-08	9.41E-14
Dysprosium (66)	Dy-151	2.03E+04	3.41E-05	6.07E+04	1.81E+04	1.39E+04	1.00E-08	2.01E-13
Dysprosium (66)	Dy-152	2.55E+03	2.72E-04	5.44E+03	1.38E+03	1.10E+03	1.00E-08	1.27E-13
Dysprosium (66)	Dy-153	9.49E+02	7.31E-04	2.52E+03	7.24E+02	5.62E+02	1.00E-08	1.76E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Dysprosium (66)	Dy-154	2.31E-07	3.00E+06	2.93E-02		2.93E-02	1.03E+06	3.79E-08
Dysprosium (66)	Dy-155	6.13E+02	1.13E-03	2.59E+03	7.04E+02	5.54E+02	1.00E-08	2.72E-13
Dysprosium (66)	Dy-157	7.46E+02	9.29E-04	2.16E+04	2.05E+03	1.88E+03	1.00E-08	7.66E-13
Dysprosium (66)	Dy-159	1.75E+00	3.96E-01	3.40E+01	4.84E+01	2.00E+01	1.00E-08	3.51E-12
Dysprosium (66)	Dy-165	2.60E+03	2.66E-04	3.95E+04	3.34E+04	1.81E+04	1.00E-08	2.23E-12
Dysprosium (66)	Dy-165m	2.90E+05	2.39E-06	4.46E+06	3.78E+06	2.05E+06	1.00E-08	2.26E-12
Dysprosium (66)	Dy-166	7.44E+01	9.32E-03	3.99E+01	4.62E+02	3.67E+01	1.00E-08	1.59E-13
Dysprosium (66)	Dy-167	5.87E+04	1.18E-05	1.14E+06	1.49E+05	1.32E+05	1.00E-08	7.26E-13
Dysprosium (66)	Dy-168	4.19E+04	1.66E-05		9.95E+13	9.95E+13	1.00E-08	7.75E-04
Erbium (68)	Er-154	9.77E+04	7.10E-06	3.92E+07	7.48E+06	6.28E+06	1.00E-08	1.92E-11
Erbium (68)	Er-156	1.87E+04	3.71E-05	3.32E+05	8.33E+03	8.13E+03	1.00E-08	1.32E-13
Erbium (68)	Er-159	1.01E+04	6.85E-05	1.46E+05	7.04E+03	6.72E+03	1.00E-08	2.05E-13
Erbium (68)	Er-161	1.89E+03	3.66E-04	3.42E+04	1.73E+03	1.65E+03	1.00E-08	2.73E-13
Erbium (68)	Er-163	4.86E+03	1.43E-04	3.24E+06	1.25E+05	1.20E+05	1.00E-08	7.83E-12
Erbium (68)	Er-165	5.86E+02	1.18E-03	5.15E+04	1.61E+04	1.23E+04	1.00E-08	6.70E-12
Erbium (68)	Er-167m	9.63E+06	7.19E-08		1.25E+30	1.25E+30	7.94E-06	4.21E+10
Erbium (68)	Er-169	2.69E+01	2.58E-02	1.18E+02	3.44E+05	1.18E+02	1.00E-08	1.44E-12
Erbium (68)	Er-171	8.08E+02	8.58E-04	3.45E+03	1.91E+03	1.23E+03	1.00E-08	5.05E-13
Erbium (68)	Er-172	1.23E+02	5.63E-03	7.48E+01	1.13E+02	4.50E+01	1.00E-08	1.22E-13
Erbium (68)	Er-173	2.54E+05	2.73E-06	1.41E+06	5.86E+05	4.14E+05	1.00E-08	5.47E-13
Einsteinium (99)	Es-249	3.56E+03	1.94E-04	8.88E+03	8.33E+03	4.30E+03	1.00E-08	5.83E-13
Einsteinium (99)	Es-250	7.06E+02	9.82E-04	1.34E+02	5.62E+02	1.08E+02	1.00E-08	7.44E-14
Einsteinium (99)	Es-250m	2.73E+03	2.53E-04	5.38E+02	4.80E+03	4.84E+02	1.00E-08	8.58E-14
Einsteinium (99)	Es-251	1.84E+02	3.77E-03	7.02E+02	1.97E+03	5.18E+02	1.00E-08	1.37E-12
Einsteinium (99)	Es-253	1.24E+01	5.61E-02	2.77E+00	1.67E+04	2.77E+00	1.00E-08	1.10E-13
Einsteinium (99)	Es-254	9.17E-01	7.55E-01	6.55E-02	1.58E+00	6.29E-02	1.00E-08	3.38E-14
Einsteinium (99)	Es-254m	1.54E+02	4.49E-03	1.91E+01	2.86E+02	1.79E+01	1.00E-08	5.73E-14
Einsteinium (99)	Es-255	6.36E+00	1.09E-01	1.07E+00	3.82E+02	1.06E+00	1.00E-08	8.29E-14
Einsteinium (99)	Es-256	1.43E+04	4.83E-05	1.17E+03	1.09E+03	5.64E+02	1.00E-08	1.95E-14
Europium (63)	Eu-142	9.34E+06	7.42E-08	1.42E+09	1.28E+08	1.18E+08	1.00E-08	3.47E-12
Europium (63)	Eu-142m	2.98E+05	2.33E-06	2.72E+06	2.46E+05	2.26E+05	1.00E-08	2.09E-13
Europium (63)	Eu-143	1.41E+05	4.93E-06	1.72E+06	6.87E+05	4.91E+05	1.00E-08	9.69E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Europium (63)	Eu-144	2.14E+06	3.23E-07		4.35E+24	4.35E+24	1.00E-08	5.68E+05
Europium (63)	Eu-145	4.27E+01	1.62E-02	9.79E+01	3.15E+01	2.38E+01	1.00E-08	1.57E-13
Europium (63)	Eu-146	5.49E+01	1.26E-02	8.21E+01	2.19E+01	1.73E+01	1.00E-08	8.91E-14
Europium (63)	Eu-147	1.05E+01	6.60E-02	4.13E+01	2.14E+01	1.41E+01	1.00E-08	3.83E-13
Europium (63)	Eu-148	4.64E+00	1.49E-01	6.54E+00	1.99E+00	1.53E+00	1.00E-08	9.44E-14
Europium (63)	Eu-149	2.72E+00	2.55E-01	3.06E+01	4.44E+01	1.81E+01	1.00E-08	1.93E-12
Europium (63)	Eu-150	1.88E-02	3.69E+01	1.45E+00	6.13E-01	4.31E-01	1.00E-08	6.68E-12
Europium (63)	Eu-150m	4.74E+02	1.46E-03	2.03E+03	6.04E+03	1.52E+03	1.00E-08	9.34E-13
Europium (63)	Eu-152	5.12E-02	1.35E+01	1.33E+00	8.40E-01	5.15E-01	1.00E-08	2.97E-12
Europium (63)	Eu-152m	6.52E+02	1.06E-03	2.16E+03	1.73E+03	9.61E+02	1.00E-08	4.35E-13
Europium (63)	Eu-152n	3.79E+03	1.83E-04	8.21E+04	2.84E+04	2.11E+04	1.00E-08	1.64E-12
Europium (63)	Eu-154	8.06E-02	8.59E+00	9.01E-01	7.94E-01	4.22E-01	1.00E-08	1.56E-12
Europium (63)	Eu-154m	7.92E+03	8.75E-05	8.41E+04	4.70E+04	3.01E+04	1.00E-08	1.14E-12
Europium (63)	Eu-155	1.46E-01	4.76E+00	5.37E+00	1.78E+01	4.13E+00	1.00E-08	8.53E-12
Europium (63)	Eu-156	1.67E+01	4.16E-02	1.23E+01	1.28E+01	6.26E+00	1.00E-08	1.14E-13
Europium (63)	Eu-157	4.00E+02	1.73E-03	1.08E+03	1.17E+03	5.62E+02	1.00E-08	4.28E-13
Europium (63)	Eu-158	7.94E+03	8.73E-05	1.48E+05	5.45E+03	5.25E+03	1.00E-08	2.03E-13
Europium (63)	Eu-159	2.01E+04	3.44E-05	6.55E+04	2.58E+05	5.22E+04	1.00E-08	8.00E-13
Fluorine (9)	F-17	3.39E+05	2.04E-06		5.57E+19	5.57E+19	1.00E-08	5.42E+00
Fluorine (9)	F-18	3.32E+03	2.09E-04	1.20E+05	3.47E+03	3.37E+03	1.00E-08	3.55E-14
Iron (26)	Fe-52	7.34E+02	9.45E-04	8.46E+02	2.09E+02	1.68E+02	1.00E-08	2.31E-14
Iron (26)	Fe-53	4.28E+04	1.62E-05	1.25E+13	1.28E+14	1.14E+13	1.00E-08	2.73E-05
Iron (26)	Fe-53m	1.44E+05	4.81E-06	4.20E+13	3.02E+14	3.69E+13	1.00E-08	2.63E-05
Iron (26)	Fe-55	2.53E-01	2.74E+00	4.64E+00	6.96E+09	4.64E+00	1.00E-08	1.96E-12
Iron (26)	Fe-59	5.68E+00	1.22E-01	4.71E+00	4.63E+00	2.33E+00	1.00E-08	4.70E-14
Iron (26)	Fe-60	4.62E-07	1.50E+06	1.47E-02	3.88E-01	1.42E-02	7.23E+01	3.58E-09
Iron (26)	Fe-61	6.09E+04	1.14E-05	1.38E+06	4.00E+05	3.10E+05	1.00E-08	6.02E-13
Iron (26)	Fe-62	3.21E+05	2.16E-06		3.59E+18	3.59E+18	1.00E-08	1.34E+00
Fermium (100)	Fm-251	1.15E+03	6.05E-04	3.78E+03	4.58E+03	2.07E+03	1.00E-08	8.81E-13
Fermium (100)	Fm-252	2.39E+02	2.90E-03	1.77E+01	1.52E+05	1.77E+01	1.00E-08	3.62E-14
Fermium (100)	Fm-253	8.43E+01	8.22E-03	1.78E+01	1.33E+03	1.76E+01	1.00E-08	1.02E-13
Fermium (100)	Fm-254	1.87E+03	3.70E-04	3.51E+02	2.16E+05	3.50E+02	1.00E-08	9.21E-14

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Fermium (100)	Fm-255	3.02E+02	2.29E-03	1.75E+02	3.73E+04	1.75E+02	1.00E-08	2.86E-13
Fermium (100)	Fm-256	2.31E+03	3.00E-04	1.88E+02	1.76E+02	9.09E+01	1.00E-08	1.95E-14
Fermium (100)	Fm-257	2.52E+00	2.75E-01	1.50E-01	1.81E+01	1.48E-01	1.00E-08	2.94E-14
Francium (87)	Fr-212	1.82E+04	3.81E-05	8.86E+01	1.33E+04	8.80E+01	1.00E-08	1.99E-15
Francium (87)	Fr-219	1.09E+09	6.34E-10		1.50E+21	1.50E+21	1.00E-08	5.83E-01
Francium (87)	Fr-220	7.98E+05	8.69E-07	5.10E+06	5.86E+05	5.26E+05	1.00E-08	2.81E-13
Francium (87)	Fr-221	7.43E+04	9.32E-06	4.90E+05	3.97E+05	2.19E+05	1.00E-08	1.27E-12
Francium (87)	Fr-222	2.57E+04	2.70E-05	7.20E+02	2.00E+07	7.20E+02	1.61E+00	1.21E-14
Francium (87)	Fr-223	1.66E+04	4.19E-05	1.72E+02	3.77E+04	1.71E+02	1.00E-08	4.48E-15
Francium (87)	Fr-224	1.09E+05	6.34E-06	1.81E+03	7.18E+04	1.76E+03	1.00E-08	7.01E-15
Francium (87)	Fr-227	1.47E+05	4.70E-06	1.72E+04	8.38E+06	1.72E+04	2.44E-01	5.13E-14
Gallium (31)	Ga-64	1.39E+05	5.00E-06		6.37E+16	6.37E+16	1.00E-08	5.71E-02
Gallium (31)	Ga-65	2.40E+04	2.89E-05	1.76E+04	6.17E+04	1.37E+04	1.00E-08	7.21E-14
Gallium (31)	Ga-66	6.40E+02	1.08E-03	9.09E+02	2.53E+02	1.98E+02	1.00E-08	3.96E-14
Gallium (31)	Ga-67	7.76E+01	8.93E-03	6.74E+02	4.84E+02	2.82E+02	1.00E-08	4.72E-13
Gallium (31)	Ga-68	5.38E+03	1.29E-04	8.94E+04	4.81E+03	4.57E+03	1.00E-08	1.12E-13
Gallium (31)	Ga-70	1.72E+04	4.02E-05	4.08E+12	8.04E+11	6.72E+11	1.00E-08	5.29E-06
Gallium (31)	Ga-72	4.31E+02	1.61E-03	6.62E+02	1.55E+02	1.26E+02	1.00E-08	4.07E-14
Gallium (31)	Ga-73	1.25E+03	5.55E-04	7.87E+03	3.00E+03	2.17E+03	1.00E-08	2.47E-13
Gallium (31)	Ga-74	4.49E+04	1.54E-05		6.41E+13	6.41E+13	1.00E-08	2.05E-04
Gadolinium (64)	Gd-142	3.11E+05	2.23E-06	2.85E+06	2.57E+05	2.36E+05	1.00E-08	2.09E-13
Gadolinium (64)	Gd-143m	1.99E+05	3.49E-06	2.43E+06	9.70E+05	6.94E+05	1.00E-08	9.69E-13
Gadolinium (64)	Gd-144	8.15E+04	8.50E-06		8.82E+15	8.82E+15	1.00E-08	3.02E-02
Gadolinium (64)	Gd-145	1.58E+04	4.38E-05	3.63E+04	1.17E+04	8.83E+03	1.00E-08	1.57E-13
Gadolinium (64)	Gd-145m	2.57E+05	2.70E-06	5.89E+05	1.89E+05	1.43E+05	1.00E-08	1.57E-13
Gadolinium (64)	Gd-146	5.24E+00	1.32E-01	4.30E+00	1.91E+00	1.32E+00	1.00E-08	7.15E-14
Gadolinium (64)	Gd-147	1.59E+02	4.35E-03	2.59E+02	8.13E+01	6.19E+01	1.00E-08	1.11E-13
Gadolinium (64)	Gd-148	9.29E-03	7.46E+01	3.16E-02		3.16E-02	1.00E-08	9.76E-13
Gadolinium (64)	Gd-149	2.73E+01	2.54E-02	6.74E+01	4.44E+01	2.68E+01	1.00E-08	2.84E-13
Gadolinium (64)	Gd-150	3.87E-07	1.79E+06	3.33E-02		3.33E-02	1.00E-08	2.51E-08
Gadolinium (64)	Gd-151	2.04E+00	3.40E-01	1.73E+01	3.39E+01	1.14E+01	1.00E-08	1.64E-12
Gadolinium (64)	Gd-152	6.42E-15	1.08E+14	4.25E-02		4.25E-02	1.00E-08	1.95E+00

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Gadolinium (64)	Gd-153	1.05E+00	6.59E-01	9.77E+00	1.57E+01	6.02E+00	1.00E-08	1.70E-12
Gadolinium (64)	Gd-159	3.29E+02	2.11E-03	1.07E+03	4.21E+03	8.52E+02	1.00E-08	8.00E-13
Gadolinium (64)	Gd-162	4.34E+04	1.60E-05		1.90E+13	1.90E+13	1.00E-08	1.38E-04
Germanium (32)	Ge-66	2.69E+03	2.58E-04	3.53E+03	8.26E+02	6.70E+02	1.00E-08	3.19E-14
Germanium (32)	Ge-67	1.93E+04	3.60E-05	1.68E+05	1.20E+05	7.00E+04	1.00E-08	4.72E-13
Germanium (32)	Ge-68	9.34E-01	7.42E-01	1.90E+00	1.38E+00	7.99E-01	1.48E-06	1.13E-13
Germanium (32)	Ge-69	1.55E+02	4.46E-03	1.35E+03	1.54E+02	1.38E+02	1.00E-08	1.19E-13
Germanium (32)	Ge-71	2.21E+01	3.13E-02	3.17E+03	5.40E+05	3.15E+03	1.00E-08	1.96E-11
Germanium (32)	Ge-75	4.40E+03	1.57E-04	1.61E+05	5.38E+04	4.03E+04	1.00E-08	1.33E-12
Germanium (32)	Ge-77	5.37E+02	1.29E-03	1.28E+03	4.38E+02	3.27E+02	1.00E-08	9.08E-14
Germanium (32)	Ge-78	4.14E+03	1.67E-04	2.29E+04	2.31E+03	2.10E+03	1.00E-08	7.69E-14
Hydrogen (1)	H-3	5.63E-02	1.23E+01	5.07E+01		5.07E+01	1.00E-08	5.25E-12
Hafnium (72)	Hf-167	1.78E+05	3.90E-06	4.66E+05	8.34E+04	7.07E+04	1.00E-08	1.29E-13
Hafnium (72)	Hf-169	1.12E+05	6.16E-06	1.43E+05	6.70E+04	4.56E+04	1.00E-08	1.33E-13
Hafnium (72)	Hf-170	3.79E+02	1.83E-03	4.90E+02	1.27E+02	1.01E+02	1.00E-08	8.76E-14
Hafnium (72)	Hf-172	3.71E-01	1.87E+00	8.67E-01	5.66E-01	3.43E-01	2.51E-02	3.08E-13
Hafnium (72)	Hf-173	2.57E+02	2.69E-03	1.20E+03	5.36E+02	3.71E+02	1.00E-08	4.84E-13
Hafnium (72)	Hf-174	3.47E-16	2.00E+15	7.17E-03		7.17E-03	1.79E-08	6.99E+00
Hafnium (72)	Hf-175	3.61E+00	1.92E-01	1.59E+01	1.01E+01	6.16E+00	1.00E-08	5.79E-13
Hafnium (72)	Hf-177m	7.09E+03	9.78E-05	1.48E+05	2.97E+03	2.91E+03	1.00E-08	1.41E-13
Hafnium (72)	Hf-178m	2.24E-02	3.10E+01	4.60E-01	4.28E-01	2.22E-01	1.00E-08	3.42E-12
Hafnium (72)	Hf-179m	1.01E+01	6.86E-02	1.36E+01	1.05E+01	5.92E+00	1.00E-08	2.03E-13
Hafnium (72)	Hf-180m	1.10E+03	6.28E-04	1.13E+04	1.06E+03	9.69E+02	1.00E-08	3.07E-13
Hafnium (72)	Hf-181	5.97E+00	1.16E-01	9.01E+00	1.06E+01	4.88E+00	1.00E-08	2.87E-13
Hafnium (72)	Hf-182	7.70E-08	9.00E+06	4.17E-01	6.31E-01	2.51E-01	6.88E+00	1.15E-06
Hafnium (72)	Hf-182m	5.92E+03	1.17E-04	1.23E+04	3.54E+03	2.75E+03	1.00E-08	1.64E-13
Hafnium (72)	Hf-183	5.69E+03	1.22E-04	6.63E+03	4.87E+03	2.81E+03	1.00E-08	1.75E-13
Hafnium (72)	Hf-184	1.47E+03	4.70E-04	2.08E+03	7.53E+02	5.53E+02	1.00E-08	1.34E-13
Mercury (80)	Hg-190	1.82E+04	3.81E-05	7.61E+05	7.70E+03	7.62E+03	1.00E-08	1.54E-13
Mercury (80)	Hg-191m	7.17E+03	9.67E-05	2.49E+04	2.90E+03	2.60E+03	1.00E-08	1.34E-13
Mercury (80)	Hg-192	1.25E+03	5.54E-04	5.55E+03	5.65E+02	5.13E+02	1.00E-08	1.53E-13
Mercury (80)	Hg-193	1.60E+03	4.34E-04	1.16E+04	1.55E+03	1.37E+03	1.00E-08	3.20E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Mercury (80)	Hg-193m	5.14E+02	1.35E-03	1.56E+03	3.50E+02	2.86E+02	1.00E-08	2.08E-13
Mercury (80)	Hg-194	1.58E-03	4.40E+02	1.09E+00	9.45E-01	5.06E-01	3.78E-02	1.21E-10
Mercury (80)	Hg-195	5.77E+02	1.20E-03	3.25E+03	2.21E+03	1.32E+03	1.00E-08	8.64E-13
Mercury (80)	Hg-195m	1.46E+02	4.75E-03	3.04E+02	3.92E+02	1.71E+02	1.00E-08	4.44E-13
Mercury (80)	Hg-197	9.35E+01	7.41E-03	6.23E+02	1.37E+03	4.28E+02	1.00E-08	1.75E-12
Mercury (80)	Hg-197m	2.55E+02	2.72E-03	5.96E+02	1.63E+03	4.36E+02	1.00E-08	6.54E-13
Mercury (80)	Hg-199m	8.54E+03	8.12E-05	4.70E+05	4.65E+04	4.23E+04	1.00E-08	1.91E-12
Mercury (80)	Hg-203	5.43E+00	1.28E-01	1.70E+01	2.19E+01	9.58E+00	1.00E-08	6.96E-13
Mercury (80)	Hg-205	7.00E+04	9.89E-06		4.45E+16	4.45E+16	1.00E-08	2.53E-01
Mercury (80)	Hg-206	4.47E+04	1.55E-05		6.52E+14	6.52E+14	1.00E-08	5.83E-03
Mercury (80)	Hg-207	1.26E+05	5.52E-06		1.15E+17	1.15E+17	1.00E-08	3.68E-01
Holmium (67)	Ho-150	2.85E+05	2.44E-06	5.49E+05	1.11E+05	9.20E+04	1.00E-08	9.41E-14
Holmium (67)	Ho-153	1.81E+05	3.82E-06	4.80E+05	1.38E+05	1.07E+05	1.00E-08	1.75E-13
Holmium (67)	Ho-153m	3.92E+04	1.77E-05	1.04E+05	2.98E+04	2.32E+04	1.00E-08	1.76E-13
Holmium (67)	Ho-154	3.10E+04	2.24E-05	1.16E+09	8.10E+07	7.57E+07	1.00E-08	7.30E-10
Holmium (67)	Ho-154m	1.17E+05	5.90E-06	1.49E+10	3.88E+16	1.49E+10	1.03E+06	3.79E-08
Holmium (67)	Ho-155	7.59E+03	9.13E-05	2.93E+04	4.96E+03	4.24E+03	1.00E-08	1.68E-13
Holmium (67)	Ho-156	6.50E+03	1.07E-04	1.16E+05	2.90E+03	2.83E+03	1.00E-08	1.32E-13
Holmium (67)	Ho-157	2.89E+04	2.40E-05	8.37E+05	7.96E+04	7.27E+04	1.00E-08	7.66E-13
Holmium (67)	Ho-159	1.10E+04	6.29E-05	1.95E+05	2.56E+04	2.26E+04	1.00E-08	6.33E-13
Holmium (67)	Ho-160	1.42E+04	4.87E-05	2.72E+11	1.44E+09	1.43E+09	1.00E-08	3.12E-08
Holmium (67)	Ho-161	2.45E+03	2.83E-04	3.24E+05	4.51E+04	3.96E+04	1.00E-08	5.05E-12
Holmium (67)	Ho-162	2.43E+04	2.85E-05	5.57E+15	6.17E+13	6.11E+13	1.00E-08	7.90E-04
Holmium (67)	Ho-162m	5.44E+03	1.27E-04	3.48E+05	7.97E+03	7.79E+03	1.00E-08	4.51E-13
Holmium (67)	Ho-163	1.52E-04	4.57E+03	5.65E+02		5.65E+02	1.00E-08	1.18E-06
Holmium (67)	Ho-164	1.26E+04	5.52E-05	7.20E+10	1.07E+10	9.35E+09	1.00E-08	2.37E-07
Holmium (67)	Ho-164m	9.59E+03	7.23E-05	6.19E+05	1.18E+05	9.94E+04	1.00E-08	3.30E-12
Holmium (67)	Ho-166	2.27E+02	3.06E-03	2.65E+02	1.91E+03	2.33E+02	1.00E-08	3.31E-13
Holmium (67)	Ho-166m	5.78E-04	1.20E+03	8.87E-01	5.83E-01	3.52E-01	1.00E-08	1.96E-10
Holmium (67)	Ho-167	1.96E+03	3.54E-04	3.78E+04	4.96E+03	4.39E+03	1.00E-08	7.26E-13
Holmium (67)	Ho-168	1.22E+05	5.69E-06		2.52E+17	2.52E+17	1.00E-08	6.74E-01
Holmium (67)	Ho-168m	1.66E+05	4.19E-06		1.18E+17	1.18E+17	1.00E-08	2.33E-01

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Holmium (67)	Ho-170	1.32E+05	5.25E-06		1.36E+17	1.36E+17	1.00E-08	3.40E-01
Iodine (53)	I-118	2.66E+04	2.61E-05	1.45E+04	2.69E+04	9.43E+03	1.00E-08	8.12E-14
Iodine (53)	I-118m	4.29E+04	1.62E-05	2.34E+04	4.33E+04	1.52E+04	1.00E-08	8.13E-14
Iodine (53)	I-119	1.91E+04	3.63E-05	1.26E+05	2.29E+04	1.94E+04	1.00E-08	2.35E-13
Iodine (53)	I-120	4.46E+03	1.55E-04	2.46E+04	1.58E+03	1.49E+03	1.00E-08	7.75E-14
Iodine (53)	I-120m	6.87E+03	1.01E-04	7.40E+04	1.81E+03	1.77E+03	1.00E-08	5.98E-14
Iodine (53)	I-121	2.86E+03	2.42E-04	9.64E+03	2.77E+03	2.15E+03	1.00E-08	1.77E-13
Iodine (53)	I-122	1.00E+05	6.91E-06		2.61E+17	2.61E+17	1.00E-08	6.16E-01
Iodine (53)	I-123	4.57E+02	1.51E-03	3.19E+03	2.65E+03	1.45E+03	1.00E-08	7.55E-13
Iodine (53)	I-124	6.06E+01	1.14E-02	7.21E+00	5.15E+01	6.32E+00	1.00E-08	2.51E-14
Iodine (53)	I-125	4.26E+00	1.63E-01	5.17E-01	1.21E+02	5.14E-01	1.00E-08	2.93E-14
Iodine (53)	I-126	1.96E+01	3.54E-02	1.08E+00	4.13E+01	1.05E+00	1.00E-08	1.32E-14
Iodine (53)	I-128	1.46E+04	4.75E-05	1.36E+11	2.17E+10	1.87E+10	1.00E-08	3.19E-07
Iodine (53)	I-129	4.41E-08	1.57E+07	1.87E-02	4.48E+01	1.87E-02	1.00E-08	1.06E-07
Iodine (53)	I-130	4.91E+02	1.41E-03	4.02E+02	2.14E+02	1.40E+02	1.00E-08	7.17E-14
Iodine (53)	I-130m	4.12E+04	1.68E-05	4.02E+04	2.14E+04	1.39E+04	1.00E-08	8.53E-14
Iodine (53)	I-131	3.15E+01	2.20E-02	2.28E+00	7.71E+01	2.21E+00	1.00E-08	1.78E-14
Iodine (53)	I-132	2.65E+03	2.62E-04	1.48E+04	1.08E+03	1.01E+03	1.00E-08	9.77E-14
Iodine (53)	I-132m	4.38E+03	1.58E-04	1.55E+04	1.77E+03	1.59E+03	1.00E-08	9.32E-14
Iodine (53)	I-133	2.92E+02	2.37E-03	1.00E+02	3.92E+02	7.97E+01	1.00E-08	7.04E-14
Iodine (53)	I-134	6.94E+03	9.99E-05	1.14E+05	2.49E+03	2.43E+03	1.00E-08	9.12E-14
Iodine (53)	I-134m	1.01E+05	6.85E-06	1.71E+06	3.71E+04	3.63E+04	1.00E-08	9.33E-14
Iodine (53)	I-135	9.24E+02	7.50E-04	1.59E+03	4.61E+02	3.58E+02	1.00E-08	1.01E-13
Indium (49)	In-103	3.64E+05	1.90E-06	2.59E+06	3.99E+05	3.46E+05	1.00E-08	1.90E-13
Indium (49)	In-105	7.18E+04	9.65E-06	2.52E+05	3.82E+04	3.32E+04	1.00E-08	9.41E-14
Indium (49)	In-106	5.87E+04	1.18E-05		3.54E+14	3.54E+14	1.00E-08	1.24E-03
Indium (49)	In-106m	7.00E+04	9.89E-06		1.07E+15	1.07E+15	1.00E-08	3.14E-03
Indium (49)	In-107	1.12E+04	6.16E-05	1.83E+05	6.91E+03	6.66E+03	1.00E-08	1.23E-13
Indium (49)	In-108	6.28E+03	1.10E-04	1.46E+05	1.53E+03	1.52E+03	1.00E-08	5.06E-14
Indium (49)	In-108m	9.20E+03	7.53E-05	1.96E+05	3.26E+03	3.20E+03	1.00E-08	7.30E-14
Indium (49)	In-109	1.45E+03	4.79E-04	2.87E+03	2.15E+03	1.23E+03	1.00E-08	1.80E-13
Indium (49)	In-109m	2.72E+05	2.55E-06	5.40E+05	4.02E+05	2.30E+05	1.00E-08	1.79E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Indium (49)	In-110	1.24E+03	5.59E-04	9.24E+03	3.79E+02	3.64E+02	1.00E-08	6.27E-14
Indium (49)	In-110m	5.27E+03	1.31E-04	8.89E+04	3.03E+03	2.93E+03	1.00E-08	1.19E-13
Indium (49)	In-111	9.02E+01	7.68E-03	5.38E+02	2.18E+02	1.55E+02	1.00E-08	3.71E-13
Indium (49)	In-111m	4.73E+04	1.46E-05	2.82E+05	1.14E+05	8.13E+04	1.00E-08	3.70E-13
Indium (49)	In-112	2.43E+04	2.85E-05	1.82E+15	3.67E+13	3.59E+13	1.00E-08	3.21E-04
Indium (49)	In-112m	1.77E+04	3.91E-05	4.19E+12	1.19E+11	1.16E+11	1.00E-08	1.42E-06
Indium (49)	In-113m	3.66E+03	1.89E-04	2.11E+05	1.33E+04	1.25E+04	1.00E-08	7.48E-13
Indium (49)	In-114	3.04E+05	2.28E-06		5.65E+20	5.65E+20	1.00E-08	4.11E+02
Indium (49)	In-114m	5.11E+00	1.36E-01	2.00E+00	2.76E+01	1.86E+00	1.00E-08	8.07E-14
Indium (49)	In-115	1.57E-15	4.41E+14	6.37E-02	2.65E+03	6.37E-02	9.94E-08	9.04E+00
Indium (49)	In-115m	1.35E+03	5.12E-04	2.57E+04	7.94E+03	6.07E+03	1.00E-08	1.00E-12
Indium (49)	In-116m	6.69E+03	1.04E-04	1.84E+05	2.63E+03	2.59E+03	1.00E-08	8.72E-14
Indium (49)	In-117	8.43E+03	8.22E-05	4.38E+05	1.13E+04	1.10E+04	1.00E-08	2.97E-13
Indium (49)	In-117m	3.13E+03	2.21E-04	3.76E+04	6.38E+03	5.45E+03	1.00E-08	3.95E-13
Indium (49)	In-118	4.37E+06	1.59E-07		1.51E+27	1.51E+27	1.00E-08	7.93E+07
Indium (49)	In-118m	8.35E+04	8.30E-06		4.88E+15	4.88E+15	1.00E-08	1.34E-02
Indium (49)	In-119	1.52E+05	4.57E-06	1.29E+08	2.52E+09	1.22E+08	1.00E-08	1.86E-10
Indium (49)	In-119m	2.02E+04	3.42E-05	3.06E+08	5.99E+09	2.91E+08	1.00E-08	3.32E-09
Indium (49)	In-121	9.46E+05	7.32E-07	7.57E+06	1.07E+10	7.57E+06	1.00E-08	1.88E-12
Indium (49)	In-121m	9.39E+04	7.38E-06	6.69E+05	1.03E+09	6.68E+05	1.00E-08	1.67E-12
Iridium (77)	Ir-180	2.43E+05	2.85E-06	6.81E+13	4.64E+11	4.60E+11	1.00E-08	6.62E-07
Iridium (77)	Ir-182	2.43E+04	2.85E-05	4.87E+04	1.42E+04	1.10E+04	1.00E-08	1.60E-13
Iridium (77)	Ir-183	6.28E+03	1.10E-04	8.62E+03	2.65E+03	2.03E+03	1.00E-08	1.15E-13
Iridium (77)	Ir-184	1.96E+03	3.53E-04	1.82E+04	9.53E+02	9.05E+02	1.00E-08	1.65E-13
Iridium (77)	Ir-185	4.22E+02	1.64E-03	9.34E+02	2.73E+02	2.11E+02	1.00E-08	1.80E-13
Iridium (77)	Ir-186	3.65E+02	1.90E-03	1.13E+03	2.13E+02	1.79E+02	1.00E-08	1.77E-13
Iridium (77)	Ir-186m	3.16E+03	2.19E-04	2.59E+04	1.84E+03	1.72E+03	1.00E-08	1.96E-13
Iridium (77)	Ir-187	5.78E+02	1.20E-03	8.60E+03	1.69E+03	1.41E+03	1.00E-08	8.85E-13
Iridium (77)	Ir-188	1.46E+02	4.74E-03	3.44E+02	7.02E+01	5.83E+01	1.00E-08	1.45E-13
Iridium (77)	Ir-189	1.92E+01	3.62E-02	1.32E+02	2.54E+02	8.67E+01	1.00E-08	1.66E-12
Iridium (77)	Ir-190	2.15E+01	3.23E-02	3.57E+01	1.37E+01	9.89E+00	1.00E-08	1.70E-13
Iridium (77)	Ir-190m	5.42E+03	1.28E-04	8.95E+03	3.45E+03	2.49E+03	1.00E-08	1.70E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	Start Time Total (yrs)	BDCC DL=1 (mg/cm ²)
Iridium (77)	Ir-190n	1.97E+03	3.52E-04	1.66E+04	1.13E+03	1.06E+03	1.00E-08	1.99E-13
Iridium (77)	Ir-191m	4.42E+06	1.57E-07		6.25E+27	6.25E+27	1.00E-08	5.24E+08
Iridium (77)	Ir-192	3.43E+00	2.02E-01	4.40E+00	4.08E+00	2.12E+00	1.00E-08	2.30E-13
Iridium (77)	Ir-192m	2.51E+05	2.76E-06	3.22E+05	2.99E+05	1.55E+05	1.00E-08	2.30E-13
Iridium (77)	Ir-192n	2.88E-03	2.41E+02	7.43E-01	1.16E+00	4.53E-01	1.62E+00	5.86E-11
Iridium (77)	Ir-193m	2.40E+01	2.88E-02	1.36E+02	6.74E+04	1.35E+02	1.00E-08	2.11E-12
Iridium (77)	Ir-194	3.15E+02	2.20E-03	3.87E+02	1.55E+03	3.10E+02	1.00E-08	3.70E-13
Iridium (77)	Ir-194m	1.48E+00	4.68E-01	1.65E+00	7.70E-01	5.25E-01	1.00E-08	1.33E-13
Iridium (77)	Ir-195	2.43E+03	2.85E-04	3.98E+04	2.94E+04	1.69E+04	1.00E-08	2.63E-12
Iridium (77)	Ir-195m	1.60E+03	4.34E-04	6.27E+03	3.65E+03	2.31E+03	1.00E-08	5.46E-13
Iridium (77)	Ir-196	4.20E+05	1.65E-06		7.64E+20	7.64E+20	1.00E-08	6.92E+02
Iridium (77)	Ir-196m	4.34E+03	1.60E-04	6.85E+04	1.64E+03	1.60E+03	1.00E-08	1.40E-13
Potassium (19)	K-38	4.77E+04	1.45E-05		1.56E+14	1.56E+14	1.00E-08	2.41E-04
Potassium (19)	K-40	5.54E-10	1.25E+09	2.75E-01	4.37E+00	2.59E-01	1.00E-08	3.62E-05
Potassium (19)	K-42	4.91E+02	1.41E-03	1.88E+03	1.10E+03	6.93E+02	1.00E-08	1.15E-13
Potassium (19)	K-43	2.72E+02	2.55E-03	1.92E+03	2.60E+02	2.29E+02	1.00E-08	7.01E-14
Potassium (19)	K-44	1.65E+04	4.21E-05	6.27E+11	1.23E+10	1.21E+10	1.00E-08	6.26E-08
Potassium (19)	K-45	2.11E+04	3.29E-05	5.80E+04	6.29E+08	5.80E+04	1.00E-08	2.41E-13
Potassium (19)	K-46	2.08E+05	3.33E-06		1.57E+18	1.57E+18	1.00E-08	6.72E-01
Krypton (36)	Kr-74	3.17E+04	2.19E-05	7.40E+10	7.62E+08	7.54E+08	1.00E-08	3.42E-09
Krypton (36)	Kr-75	8.49E+04	8.16E-06	6.29E+04	5.01E+04	2.79E+04	1.00E-08	4.78E-14
Krypton (36)	Kr-76	4.10E+02	1.69E-03	1.57E+03	1.23E+02	1.14E+02	1.00E-08	4.10E-14
Krypton (36)	Kr-77	4.90E+03	1.42E-04	9.22E+04	3.21E+03	3.10E+03	1.00E-08	9.47E-14
Krypton (36)	Kr-79	1.73E+02	4.00E-03		6.52E+02	6.52E+02	1.00E-08	5.77E-13
Krypton (36)	Kr-81	3.03E-06	2.29E+05		5.68E+02	5.68E+02	1.00E-08	2.95E-05
Krypton (36)	Kr-81m	1.67E+06	4.15E-07		3.13E+14	3.13E+14	1.00E-08	2.95E-05
Krypton (36)	Kr-83m	3.32E+03	2.09E-04		9.08E+06	9.08E+06	1.00E-08	4.41E-10
Krypton (36)	Kr-85	6.44E-02	1.08E+01		8.77E+01	8.77E+01	1.00E-08	2.25E-10
Krypton (36)	Kr-85m	1.36E+03	5.11E-04		7.74E+03	7.74E+03	1.00E-08	9.43E-13
Krypton (36)	Kr-87	4.77E+03	1.45E-04	3.74E+14	5.08E+03	5.08E+03	1.00E-08	1.80E-13
Krypton (36)	Kr-88	2.14E+03	3.24E-04	3.96E+04	7.73E+02	7.58E+02	1.00E-08	6.06E-14
Krypton (36)	Kr-89	1.16E+05	5.99E-06	7.29E+04	1.51E+06	6.95E+04	1.00E-08	1.04E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	Start Time Total (yrs)	BDCC DL=1 (mg/cm ²)
Lanthanum (57)	La-128	7.03E+04	9.86E-06	4.46E+04	6.23E+04	2.60E+04	1.00E-08	9.18E-14
Lanthanum (57)	La-129	3.14E+04	2.21E-05	5.09E+05	4.18E+04	3.86E+04	1.00E-08	3.08E-13
Lanthanum (57)	La-130	4.19E+04	1.66E-05		8.13E+13	8.13E+13	1.00E-08	4.90E-04
Lanthanum (57)	La-131	6.17E+03	1.12E-04	1.93E+04	4.98E+03	3.96E+03	1.00E-08	1.63E-13
Lanthanum (57)	La-132	1.26E+03	5.48E-04	5.28E+03	5.97E+02	5.36E+02	1.00E-08	1.09E-13
Lanthanum (57)	La-132m	1.50E+04	4.62E-05	8.24E+04	9.31E+03	8.37E+03	1.00E-08	1.43E-13
Lanthanum (57)	La-133	1.55E+03	4.47E-04	1.78E+04	7.92E+03	5.48E+03	1.00E-08	9.11E-13
Lanthanum (57)	La-134	5.65E+04	1.23E-05		9.98E+14	9.98E+14	1.00E-08	4.60E-03
Lanthanum (57)	La-135	3.11E+02	2.23E-03	1.71E+04	9.11E+03	5.94E+03	1.00E-08	5.00E-12
Lanthanum (57)	La-136	3.69E+04	1.88E-05		1.57E+14	1.57E+14	1.00E-08	1.12E-03
Lanthanum (57)	La-137	1.16E-05	6.00E+04	2.04E+01	4.44E+01	1.40E+01	1.00E-08	3.21E-07
Lanthanum (57)	La-138	6.79E-12	1.02E+11	1.65E+00	7.97E-01	5.37E-01	1.00E-08	2.12E-02
Lanthanum (57)	La-140	1.51E+02	4.60E-03	1.28E+02	6.26E+01	4.20E+01	1.00E-08	7.57E-14
Lanthanum (57)	La-141	1.55E+03	4.47E-04	2.35E+03	6.59E+03	1.73E+03	1.00E-08	3.06E-13
Lanthanum (57)	La-142	4.00E+03	1.73E-04	3.91E+04	1.65E+03	1.58E+03	1.00E-08	1.09E-13
Lanthanum (57)	La-143	2.57E+04	2.70E-05	1.83E+04	7.11E+04	1.45E+04	1.00E-08	1.57E-13
Lutetium (71)	Lu-165	3.39E+04	2.04E-05	1.55E+05	5.39E+04	4.00E+04	1.00E-08	3.77E-13
Lutetium (71)	Lu-167	7.07E+03	9.80E-05	1.86E+04	3.32E+03	2.82E+03	1.00E-08	1.29E-13
Lutetium (71)	Lu-169	1.78E+02	3.89E-03	2.27E+02	1.06E+02	7.24E+01	1.00E-08	1.33E-13
Lutetium (71)	Lu-169m	1.37E+05	5.07E-06	1.74E+05	8.15E+04	5.55E+04	1.00E-08	1.33E-13
Lutetium (71)	Lu-170	1.26E+02	5.51E-03	2.33E+02	4.96E+01	4.09E+01	1.00E-08	1.07E-13
Lutetium (71)	Lu-171	3.07E+01	2.26E-02	7.67E+01	4.51E+01	2.84E+01	1.00E-08	3.07E-13
Lutetium (71)	Lu-171m	2.77E+05	2.51E-06	6.91E+05	4.07E+05	2.56E+05	1.00E-08	3.07E-13
Lutetium (71)	Lu-172	3.78E+01	1.84E-02	5.05E+01	1.85E+01	1.35E+01	1.00E-08	1.20E-13
Lutetium (71)	Lu-172m	9.84E+04	7.04E-06	1.32E+05	4.83E+04	3.53E+04	1.00E-08	1.20E-13
Lutetium (71)	Lu-173	5.06E-01	1.37E+00	5.91E+00	6.93E+00	3.19E+00	1.00E-08	2.12E-12
Lutetium (71)	Lu-174	2.09E-01	3.31E+00	6.54E+00	9.60E+00	3.89E+00	1.00E-08	6.27E-12
Lutetium (71)	Lu-174m	1.78E+00	3.89E-01	6.09E+00	2.95E+01	5.05E+00	1.00E-08	9.58E-13
Lutetium (71)	Lu-176	1.80E-11	3.85E+10	9.34E-01	2.00E+00	6.36E-01	1.00E-08	1.21E-02
Lutetium (71)	Lu-176m	1.67E+03	4.15E-04	1.66E+04	2.65E+04	1.02E+04	1.00E-08	2.09E-12
Lutetium (71)	Lu-177	3.81E+01	1.82E-02	1.18E+02	1.06E+03	1.06E+02	1.00E-08	9.55E-13
Lutetium (71)	Lu-177m	1.58E+00	4.39E-01	1.85E+00	1.90E+00	9.37E-01	1.00E-08	2.04E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Lutetium (71)	Lu-178	1.28E+04	5.40E-05	1.97E+10	2.43E+09	2.16E+09	1.00E-08	5.82E-08
Lutetium (71)	Lu-178m	1.58E+04	4.39E-05	7.22E+11	1.24E+10	1.22E+10	1.00E-08	2.67E-07
Lutetium (71)	Lu-179	1.32E+03	5.24E-04	1.01E+04	1.48E+04	6.00E+03	1.00E-08	1.57E-12
Lutetium (71)	Lu-180	6.39E+04	1.08E-05		5.04E+15	5.04E+15	1.00E-08	2.76E-02
Lutetium (71)	Lu-181	1.04E+05	6.66E-06	1.57E+05	1.85E+05	8.51E+04	1.00E-08	2.87E-13
Magnesium (12)	Mg-27	3.85E+04	1.80E-05		1.99E+14	1.99E+14	1.00E-08	2.71E-04
Magnesium (12)	Mg-28	2.90E+02	2.39E-03	2.33E+02	8.72E+01	6.34E+01	1.00E-08	1.19E-14
Manganese (25)	Mn-50m	2.08E+05	3.33E-06		9.32E+17	9.32E+17	1.00E-08	4.34E-01
Manganese (25)	Mn-51	7.88E+03	8.79E-05	1.03E+05	6.40E+03	6.02E+03	1.00E-08	7.56E-14
Manganese (25)	Mn-52	4.52E+01	1.53E-02	4.53E+01	1.26E+01	9.84E+00	1.00E-08	2.19E-14
Manganese (25)	Mn-52m	1.73E+04	4.01E-05	9.84E+05	2.74E+05	2.14E+05	1.00E-08	1.25E-12
Manganese (25)	Mn-53	1.87E-07	3.70E+06	5.46E+01		5.46E+01	1.00E-08	3.00E-05
Manganese (25)	Mn-54	8.10E-01	8.55E-01	3.71E+00	1.65E+00	1.14E+00	1.00E-08	1.48E-13
Manganese (25)	Mn-56	2.35E+03	2.94E-04	1.56E+04	1.30E+03	1.20E+03	1.00E-08	5.53E-14
Manganese (25)	Mn-57	2.56E+05	2.71E-06		1.34E+20	1.34E+20	1.00E-08	5.81E+01
Manganese (25)	Mn-58m	3.35E+05	2.07E-06		2.64E+19	2.64E+19	1.00E-08	8.87E+00
Molybdenum (42)	Mo-101	2.49E+04	2.78E-05	3.99E+13	1.06E+12	1.04E+12	1.00E-08	8.15E-06
Molybdenum (42)	Mo-102	3.22E+04	2.15E-05	2.11E+15	2.54E+14	2.27E+14	1.00E-08	1.39E-03
Molybdenum (42)	Mo-89	1.73E+05	4.01E-06	2.81E+05	6.22E+04	5.09E+04	1.00E-08	5.09E-14
Molybdenum (42)	Mo-90	1.09E+03	6.35E-04	1.30E+03	2.14E+02	1.83E+02	1.00E-08	2.93E-14
Molybdenum (42)	Mo-91	2.35E+04	2.95E-05	2.09E+08	1.54E+09	1.84E+08	1.00E-08	1.38E-09
Molybdenum (42)	Mo-91m	3.38E+05	2.05E-06	2.75E+06	2.34E+07	2.46E+06	1.00E-08	1.28E-12
Molybdenum (42)	Mo-93	1.73E-04	4.00E+03	6.99E-01	2.05E+02	6.97E-01	5.72E+01	7.26E-10
Molybdenum (42)	Mo-93m	8.86E+02	7.82E-04	1.36E+04	3.71E+02	3.61E+02	1.00E-08	7.36E-14
Molybdenum (42)	Mo-99	9.21E+01	7.53E-03	2.61E+02	2.97E+02	1.39E+02	1.00E-08	2.89E-13
Nitrogen (7)	N-13	3.66E+04	1.90E-05		6.26E+13	6.26E+13	1.00E-08	4.32E-05
Nitrogen (7)	N-16	3.07E+06	2.26E-07		3.29E+25	3.29E+25	1.00E-08	3.33E+05
Sodium (11)	Na-22	2.66E-01	2.60E+00	6.63E-01	4.96E-01	2.84E-01	1.00E-08	4.55E-14
Sodium (11)	Na-24	4.06E+02	1.71E-03	1.68E+03	1.01E+02	9.52E+01	1.00E-08	1.09E-14
Niobium (41)	Nb-87	9.71E+04	7.13E-06	1.72E+05	4.37E+04	3.48E+04	1.00E-08	6.06E-14
Niobium (41)	Nb-88	2.51E+04	2.76E-05	3.32E+04	1.05E+04	7.95E+03	1.00E-08	5.40E-14
Niobium (41)	Nb-88m	4.68E+04	1.48E-05	6.19E+04	1.95E+04	1.48E+04	1.00E-08	5.40E-14

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Niobium (41)	Nb-89	2.99E+03	2.32E-04	4.87E+03	1.08E+03	8.82E+02	1.00E-08	5.09E-14
Niobium (41)	Nb-89m	5.52E+03	1.26E-04	1.10E+04	1.65E+03	1.44E+03	1.00E-08	4.50E-14
Niobium (41)	Nb-90	4.16E+02	1.67E-03	5.80E+02	9.82E+01	8.39E+01	1.00E-08	3.53E-14
Niobium (41)	Nb-91	1.02E-03	6.80E+02	3.64E+01	1.88E+02	3.05E+01	1.00E-08	5.28E-09
Niobium (41)	Nb-91m	4.16E+00	1.67E-01	1.69E+01	1.44E+02	1.51E+01	1.00E-08	6.42E-13
Niobium (41)	Nb-92	2.00E-08	3.47E+07	1.78E+00	6.28E-01	4.64E-01	1.00E-08	4.15E-06
Niobium (41)	Nb-92m	2.49E+01	2.78E-02	9.00E+01	2.46E+01	1.93E+01	1.00E-08	1.38E-13
Niobium (41)	Nb-93m	4.30E-02	1.61E+01	1.30E+01	1.33E+03	1.28E+01	1.00E-08	5.40E-11
Niobium (41)	Nb-94	3.41E-05	2.03E+04	1.01E+00	6.03E-01	3.78E-01	1.00E-08	2.02E-09
Niobium (41)	Nb-94m	5.82E+04	1.19E-05	1.74E+09	1.03E+09	6.47E+08	1.00E-08	2.03E-09
Niobium (41)	Nb-95	7.23E+00	9.59E-02	2.18E+01	8.89E+00	6.32E+00	1.00E-08	1.61E-13
Niobium (41)	Nb-95m	7.01E+01	9.89E-03	1.03E+02	8.37E+01	4.61E+01	1.00E-08	1.21E-13
Niobium (41)	Nb-96	2.60E+02	2.67E-03	4.14E+02	9.96E+01	8.03E+01	1.00E-08	5.75E-14
Niobium (41)	Nb-97	5.05E+03	1.37E-04	1.24E+05	6.61E+03	6.28E+03	1.00E-08	2.34E-13
Niobium (41)	Nb-98m	7.10E+03	9.76E-05	1.13E+05	2.34E+03	2.29E+03	1.00E-08	6.13E-14
Niobium (41)	Nb-99	1.46E+06	4.76E-07	4.13E+06	4.69E+06	2.20E+06	1.00E-08	2.90E-13
Niobium (41)	Nb-99m	1.40E+05	4.95E-06	3.96E+05	4.51E+05	2.11E+05	1.00E-08	2.89E-13
Neodymium (60)	Nd-134	4.29E+04	1.62E-05	2.67E+04	4.80E+04	1.72E+04	1.00E-08	1.04E-13
Neodymium (60)	Nd-135	2.94E+04	2.36E-05	1.76E+05	3.25E+04	2.75E+04	1.00E-08	2.45E-13
Neodymium (60)	Nd-136	7.19E+03	9.64E-05	9.31E+04	2.74E+03	2.66E+03	1.00E-08	9.78E-14
Neodymium (60)	Nd-137	9.46E+03	7.32E-05	1.38E+05	5.51E+03	5.29E+03	1.00E-08	1.49E-13
Neodymium (60)	Nd-138	1.20E+03	5.75E-04	3.13E+03	1.15E+03	8.38E+02	1.00E-08	1.86E-13
Neodymium (60)	Nd-139	1.23E+04	5.65E-05	8.21E+04	4.48E+04	2.90E+04	1.00E-08	6.37E-13
Neodymium (60)	Nd-139m	1.10E+03	6.28E-04	3.83E+03	5.54E+02	4.84E+02	1.00E-08	1.18E-13
Neodymium (60)	Nd-140	7.51E+01	9.23E-03	6.26E+01	1.10E+02	3.99E+01	1.00E-08	1.44E-13
Neodymium (60)	Nd-141	2.44E+03	2.84E-04	4.88E+05	3.13E+04	2.95E+04	1.00E-08	3.31E-12
Neodymium (60)	Nd-141m	3.52E+05	1.97E-06	7.01E+07	4.50E+06	4.23E+06	1.00E-08	3.28E-12
Neodymium (60)	Nd-144	3.03E-16	2.29E+15	4.28E-02		4.28E-02	6.29E-05	3.95E+01
Neodymium (60)	Nd-147	2.30E+01	3.01E-02	3.34E+01	1.47E+02	2.72E+01	1.00E-08	3.37E-13
Neodymium (60)	Nd-149	3.51E+03	1.97E-04	5.16E+03	7.20E+03	3.01E+03	1.00E-08	2.47E-13
Neodymium (60)	Nd-151	2.93E+04	2.37E-05	6.59E+04	7.98E+04	3.61E+04	1.00E-08	3.61E-13
Neodymium (60)	Nd-152	3.20E+04	2.17E-05	4.59E+15	1.47E+14	1.42E+14	1.00E-08	1.31E-03

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Neon (10)	Ne-19	1.27E+06	5.46E-07		9.99E+23	9.99E+23	1.00E-08	2.90E+04
Neon (10)	Ne-24	1.08E+05	6.43E-06	4.45E+05	2.67E+04	2.52E+04	1.00E-08	1.09E-14
Nickel (28)	Ni-56	4.16E+01	1.66E-02	2.15E+01	7.83E+00	5.74E+00	1.00E-08	1.50E-14
Nickel (28)	Ni-57	1.71E+02	4.06E-03	2.84E+02	8.24E+01	6.39E+01	1.00E-08	4.14E-14
Nickel (28)	Ni-59	6.86E-06	1.01E+05	2.84E+01	6.03E+04	2.84E+01	1.00E-08	4.74E-07
Nickel (28)	Ni-63	6.92E-03	1.00E+02	1.15E+01		1.15E+01	1.00E-08	2.02E-10
Nickel (28)	Ni-65	2.41E+03	2.87E-04	2.22E+04	3.73E+03	3.19E+03	1.00E-08	1.67E-13
Nickel (28)	Ni-66	1.11E+02	6.23E-03	6.06E+01	4.61E+02	5.35E+01	1.00E-08	6.17E-14
Neptunium (93)	Np-232	2.48E+04	2.80E-05	9.30E+03	1.79E+06	9.26E+03	7.05E+00	1.68E-13
Neptunium (93)	Np-233	1.01E+04	6.89E-05	6.31E+06	1.16E+05	6.31E+06	3.36E+04	2.83E-10
Neptunium (93)	Np-234	5.75E+01	1.21E-02	1.57E+02	5.13E+01	3.87E+01	1.00E-08	3.06E-13
Neptunium (93)	Np-235	6.39E-01	1.09E+00	3.84E+01	5.59E+02	3.59E+01	1.00E-08	2.57E-11
Neptunium (93)	Np-236	4.50E-06	1.54E+05	1.83E-02	2.96E+00	1.82E-02	7.10E+02	1.85E-09
Neptunium (93)	Np-236m	2.70E+02	2.57E-03	5.15E+01	5.55E+03	5.11E+01	1.00E-08	8.67E-14
Neptunium (93)	Np-237	3.23E-07	2.14E+06	2.56E-03	1.93E+00	2.56E-03	6.31E+05	3.64E-09
Neptunium (93)	Np-238	1.19E+02	5.80E-03	8.30E+01	1.89E+02	5.77E+01	1.00E-08	2.23E-13
Neptunium (93)	Np-239	1.07E+02	6.46E-03	2.17E+02	5.91E+02	1.59E+02	1.00E-08	6.86E-13
Neptunium (93)	Np-240	5.88E+03	1.18E-04	1.05E+05	5.25E+03	5.00E+03	1.00E-08	3.96E-13
Neptunium (93)	Np-240m	5.04E+04	1.37E-05	3.75E+06	1.30E+09	3.74E+06	1.00E-08	3.45E-11
Neptunium (93)	Np-241	2.62E+04	2.64E-05	1.68E+05	7.51E+08	1.68E+05	5.10E+01	3.01E-12
Neptunium (93)	Np-242	1.66E+05	4.19E-06	7.39E+08	1.44E+14	7.39E+08	1.00E-08	2.10E-09
Neptunium (93)	Np-242m	6.62E+04	1.05E-05	2.96E+08	5.65E+13	2.96E+08	1.00E-08	2.10E-09
Oxygen (8)	O-14	3.10E+05	2.24E-06		3.97E+19	3.97E+19	1.00E-08	3.48E+00
Oxygen (8)	O-15	1.79E+05	3.88E-06		1.00E+18	1.00E+18	1.00E-08	1.63E-01
Oxygen (8)	O-19	8.26E+05	8.39E-07		2.18E+22	2.18E+22	1.00E-08	9.73E+02
Osmium (76)	Os-180	1.69E+04	4.09E-05	5.11E+12	3.48E+10	3.45E+10	1.00E-08	7.12E-07
Osmium (76)	Os-181	3.47E+03	2.00E-04	9.99E+03	1.51E+03	1.31E+03	1.00E-08	1.33E-13
Osmium (76)	Os-182	2.75E+02	2.52E-03	5.51E+02	1.61E+02	1.25E+02	1.00E-08	1.60E-13
Osmium (76)	Os-183	4.67E+02	1.48E-03	6.73E+02	5.82E+02	3.12E+02	1.00E-08	2.37E-13
Osmium (76)	Os-183m	6.13E+02	1.13E-03	8.76E+02	4.75E+02	3.08E+02	1.00E-08	1.78E-13
Osmium (76)	Os-185	2.70E+00	2.56E-01	1.03E+01	3.95E+00	2.86E+00	1.00E-08	3.79E-13
Osmium (76)	Os-186	3.47E-16	2.00E+15	5.27E-02		5.27E-02	2.01E-07	5.49E+01

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Osmium (76)	Os-189m	1.05E+03	6.62E-04	1.00E+05	2.32E+07	9.98E+04	1.00E-08	3.50E-11
Osmium (76)	Os-190m	3.68E+04	1.88E-05		4.20E+13	4.20E+13	1.00E-08	4.21E-04
Osmium (76)	Os-191	1.64E+01	4.22E-02	4.68E+01	2.06E+02	3.81E+01	1.00E-08	8.60E-13
Osmium (76)	Os-191m	4.63E+02	1.50E-03	1.13E+03	5.43E+03	9.33E+02	1.00E-08	7.46E-13
Osmium (76)	Os-193	2.02E+02	3.44E-03	3.99E+02	1.99E+03	3.33E+02	1.00E-08	6.18E-13
Osmium (76)	Os-194	1.16E-01	6.00E+00	4.57E-01	5.16E+00	4.20E-01	4.15E-03	1.37E-12
Osmium (76)	Os-196	1.04E+04	6.64E-05	1.59E+05	2.06E+04	1.82E+04	1.00E-08	6.64E-13
Phosphorus (15)	P-30	1.46E+05	4.75E-06		2.71E+17	2.71E+17	1.00E-08	1.08E-01
Phosphorus (15)	P-32	1.77E+01	3.91E-02	1.18E+01	2.06E+02	1.12E+01	1.00E-08	3.92E-14
Phosphorus (15)	P-33	9.98E+00	6.94E-02	6.70E+01	2.72E+05	6.69E+01	1.00E-08	4.29E-13
Protactinium (91)	Pa-227	9.51E+03	7.29E-05	6.07E+02	4.35E+04	5.99E+02	1.00E-08	2.77E-14
Protactinium (91)	Pa-228	2.76E+02	2.51E-03	7.98E+00	1.46E+02	7.56E+00	1.00E-08	1.21E-14
Protactinium (91)	Pa-229	1.69E+02	4.11E-03	8.51E+02	2.70E+03	6.47E+02	1.00E-08	1.70E-12
Protactinium (91)	Pa-230	1.45E+01	4.77E-02	2.88E+00	2.08E+01	2.53E+00	1.00E-08	7.78E-14
Protactinium (91)	Pa-231	2.12E-05	3.28E+04	1.92E-03	1.66E+00	1.92E-03	2.12E+02	4.06E-11
Protactinium (91)	Pa-232	1.93E+02	3.59E-03	7.25E+01	1.95E+02	5.79E+01	1.00E-08	1.35E-13
Protactinium (91)	Pa-233	9.38E+00	7.39E-02	1.61E+01	4.14E+01	1.16E+01	1.00E-08	5.58E-13
Protactinium (91)	Pa-234	9.06E+02	7.65E-04	3.68E+03	5.86E+02	5.05E+02	1.00E-08	2.53E-13
Protactinium (91)	Pa-234m	3.11E+05	2.23E-06	1.19E+08	1.24E+08	1.05E+08	1.00E-08	1.52E-10
Protactinium (91)	Pa-235	1.49E+04	4.66E-05	2.76E+10	9.12E+10	2.75E+10	4.49E+05	8.45E-07
Protactinium (91)	Pa-236	4.00E+04	1.73E-05	5.59E+10	3.32E+14	5.59E+10	1.00E-08	6.39E-07
Protactinium (91)	Pa-237	4.19E+04	1.66E-05	8.92E+04	3.04E+05	6.89E+04	1.00E-08	7.57E-13
Lead (82)	Pb-194	3.04E+04	2.28E-05	1.08E+06	2.92E+04	2.85E+04	1.00E-08	3.53E-13
Lead (82)	Pb-195m	2.43E+04	2.85E-05	1.26E+05	1.61E+04	1.43E+04	1.00E-08	2.23E-13
Lead (82)	Pb-196	9.84E+03	7.04E-05	2.25E+05	4.03E+03	3.96E+03	1.00E-08	1.53E-13
Lead (82)	Pb-197	4.55E+04	1.52E-05	2.79E+05	8.41E+04	6.46E+04	1.00E-08	5.43E-13
Lead (82)	Pb-197m	8.47E+03	8.18E-05	4.50E+04	4.09E+03	3.75E+03	1.00E-08	1.69E-13
Lead (82)	Pb-198	2.53E+03	2.74E-04	3.05E+04	1.01E+03	9.82E+02	1.00E-08	1.49E-13
Lead (82)	Pb-199	4.05E+03	1.71E-04	1.09E+05	3.05E+03	2.97E+03	1.00E-08	2.83E-13
Lead (82)	Pb-200	2.82E+02	2.45E-03	8.83E+02	1.79E+02	1.49E+02	1.00E-08	2.05E-13
Lead (82)	Pb-201	6.51E+02	1.07E-03	4.54E+03	7.40E+02	6.36E+02	1.00E-08	3.82E-13
Lead (82)	Pb-201m	3.58E+05	1.93E-06	2.50E+06	4.07E+05	3.50E+05	1.00E-08	3.81E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Lead (82)	Pb-202	1.32E-05	5.25E+04	1.05E-01	2.06E+00	1.00E-01	4.14E-01	2.98E-09
Lead (82)	Pb-202m	1.72E+03	4.03E-04	1.67E+04	7.94E+02	7.58E+02	1.00E-08	1.73E-13
Lead (82)	Pb-203	1.17E+02	5.92E-03	8.62E+02	3.64E+02	2.56E+02	1.00E-08	8.61E-13
Lead (82)	Pb-204m	5.42E+03	1.28E-04	2.04E+05	2.47E+03	2.44E+03	1.00E-08	1.78E-13
Lead (82)	Pb-205	4.53E-08	1.53E+07	6.42E+00	4.70E+03	6.41E+00	1.00E-08	5.63E-05
Lead (82)	Pb-209	1.87E+03	3.71E-04	5.65E+04	5.80E+05	5.15E+04	1.00E-08	1.12E-11
Lead (82)	Pb-210	3.12E-02	2.22E+01	8.76E-04	2.44E+01	8.76E-04	1.61E+00	1.14E-14
Lead (82)	Pb-211	1.01E+04	6.87E-05	8.71E+04	4.32E+04	2.89E+04	1.00E-08	1.17E-12
Lead (82)	Pb-212	5.71E+02	1.21E-03	1.21E+02	3.77E+02	9.17E+01	1.00E-08	6.61E-14
Lead (82)	Pb-214	1.36E+04	5.10E-05	3.81E+02	1.06E+07	3.81E+02	1.61E+00	1.17E-14
Palladium (46)	Pd-100	6.97E+01	9.95E-03	7.77E+01	2.43E+01	1.85E+01	1.00E-08	5.15E-14
Palladium (46)	Pd-101	7.17E+02	9.67E-04	4.03E+03	1.09E+03	8.56E+02	1.00E-08	2.34E-13
Palladium (46)	Pd-103	1.49E+01	4.66E-02	1.26E+02	1.57E+03	1.16E+02	1.00E-08	1.56E-12
Palladium (46)	Pd-107	1.07E-07	6.50E+06	4.27E+01		4.27E+01	1.00E-08	8.32E-05
Palladium (46)	Pd-109	4.43E+02	1.56E-03	1.30E+03	1.06E+04	1.16E+03	1.00E-08	5.54E-13
Palladium (46)	Pd-109m	7.77E+04	8.92E-06	2.27E+05	1.85E+06	2.02E+05	1.00E-08	5.51E-13
Palladium (46)	Pd-111	1.56E+04	4.45E-05	2.05E+04	2.64E+05	1.90E+04	1.00E-08	2.63E-13
Palladium (46)	Pd-112	2.89E+02	2.40E-03	1.59E+02	3.33E+02	1.07E+02	1.00E-08	8.09E-14
Palladium (46)	Pd-114	1.51E+05	4.60E-06		1.03E+18	1.03E+18	1.00E-08	1.51E+00
Palladium (46)	Pd-96	1.79E+05	3.87E-06		9.19E+13	9.19E+13	1.00E-08	9.56E-05
Palladium (46)	Pd-97	1.17E+05	5.90E-06	1.37E+06	4.83E+05	3.57E+05	1.00E-08	5.71E-13
Palladium (46)	Pd-98	2.06E+04	3.37E-05	3.83E+13	3.08E+11	3.05E+11	1.00E-08	2.82E-06
Palladium (46)	Pd-99	1.70E+04	4.07E-05	3.61E+05	2.51E+04	2.35E+04	1.00E-08	2.65E-13
Promethium (61)	Pm-136	2.04E+05	3.39E-06	2.64E+06	7.79E+04	7.57E+04	1.00E-08	9.78E-14
Promethium (61)	Pm-137m	1.52E+05	4.57E-06	4.06E+06	3.35E+05	3.09E+05	1.00E-08	5.42E-13
Promethium (61)	Pm-139	8.78E+04	7.90E-06	5.88E+05	3.21E+05	2.07E+05	1.00E-08	6.37E-13
Promethium (61)	Pm-140	2.38E+06	2.92E-07	1.98E+06	3.47E+06	1.26E+06	1.00E-08	1.44E-13
Promethium (61)	Pm-140m	6.12E+04	1.13E-05	5.10E+04	8.94E+04	3.25E+04	1.00E-08	1.44E-13
Promethium (61)	Pm-141	1.74E+04	3.98E-05	3.49E+06	2.24E+05	2.11E+05	1.00E-08	3.31E-12
Promethium (61)	Pm-142	5.40E+05	1.28E-06		1.08E+21	1.08E+21	1.00E-08	5.50E+02
Promethium (61)	Pm-143	9.55E-01	7.26E-01	1.17E+01	4.66E+00	3.33E+00	1.00E-08	9.69E-13
Promethium (61)	Pm-144	6.97E-01	9.95E-01	2.53E+00	8.31E-01	6.26E-01	1.00E-08	2.51E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Promethium (61)	Pm-145	3.92E-02	1.77E+01	1.56E+01	3.45E+01	1.07E+01	1.00E-08	7.71E-11
Promethium (61)	Pm-146	1.25E-01	5.53E+00	2.04E+00	1.32E+00	8.02E-01	1.00E-08	1.81E-12
Promethium (61)	Pm-147	2.64E-01	2.62E+00	7.08E+00	3.61E+04	7.08E+00	1.00E-08	7.65E-12
Promethium (61)	Pm-148	4.71E+01	1.47E-02	2.89E+01	6.88E+01	2.04E+01	1.00E-08	1.24E-13
Promethium (61)	Pm-148m	6.13E+00	1.13E-01	5.70E+00	2.84E+00	1.90E+00	1.00E-08	8.90E-14
Promethium (61)	Pm-149	1.14E+02	6.06E-03	1.89E+02	2.46E+03	1.75E+02	1.00E-08	4.43E-13
Promethium (61)	Pm-150	2.27E+03	3.06E-04	1.47E+04	1.40E+03	1.28E+03	1.00E-08	1.65E-13
Promethium (61)	Pm-151	2.14E+02	3.24E-03	4.84E+02	5.87E+02	2.65E+02	1.00E-08	3.64E-13
Promethium (61)	Pm-152	8.84E+04	7.84E-06		3.04E+16	3.04E+16	1.00E-08	1.02E-01
Promethium (61)	Pm-152m	4.84E+04	1.43E-05		4.93E+14	4.93E+14	1.00E-08	3.00E-03
Promethium (61)	Pm-153	6.94E+04	9.99E-06	1.55E+05	9.89E+05	1.34E+05	1.00E-08	5.73E-13
Promethium (61)	Pm-154	2.11E+05	3.29E-06		2.19E+18	2.19E+18	1.00E-08	3.11E+00
Promethium (61)	Pm-154m	1.36E+05	5.10E-06		1.13E+17	1.13E+17	1.00E-08	2.48E-01
Polonium (84)	Po-203	9.92E+03	6.98E-05	2.26E+04	2.23E+03	2.03E+03	1.00E-08	8.05E-14
Polonium (84)	Po-204	1.72E+03	4.03E-04	3.77E+03	3.86E+02	3.50E+02	1.00E-08	8.06E-14
Polonium (84)	Po-205	3.66E+03	1.89E-04	6.79E+03	1.09E+03	9.38E+02	1.00E-08	1.02E-13
Polonium (84)	Po-206	2.87E+01	2.41E-02	2.48E+00	6.42E+00	1.79E+00	1.00E-08	2.49E-14
Polonium (84)	Po-207	1.05E+03	6.62E-04	1.38E+04	7.59E+02	7.20E+02	1.00E-08	2.76E-13
Polonium (84)	Po-208	2.39E-01	2.90E+00	1.16E-03	5.02E+04	1.16E-03	1.00E-08	1.96E-15
Polonium (84)	Po-209	6.79E-03	1.02E+02	1.04E-03	1.55E+02	1.04E-03	1.00E-08	6.21E-14
Polonium (84)	Po-210	1.83E+00	3.79E-01	2.81E-03	2.11E+05	2.81E-03	1.00E-08	6.27E-16
Polonium (84)	Po-211	4.24E+07	1.64E-08		7.68E+34	7.68E+34	3.16E-06	7.43E+14
Polonium (84)	Po-212	7.31E+13	9.48E-15					
Polonium (84)	Po-212m	4.85E+05	1.43E-06		1.71E+22	1.71E+22	1.00E-08	1.45E+04
Polonium (84)	Po-213	5.20E+12	1.33E-13	2.19E+14	2.25E+15	2.00E+14	1.00E-08	1.59E-11
Polonium (84)	Po-214	1.33E+11	5.21E-12	3.73E+09	1.04E+14	3.73E+09	1.61E+00	1.17E-14
Polonium (84)	Po-215	1.23E+10	5.65E-11	2.57E+14	1.19E+14	8.13E+13	1.00E-08	2.76E-09
Polonium (84)	Po-216	1.51E+08	4.60E-09	3.16E+07	9.00E+07	2.34E+07	1.00E-08	6.50E-14
Polonium (84)	Po-218	1.17E+05	5.90E-06	3.30E+03	9.17E+07	3.30E+03	1.61E+00	1.19E-14
Praseodymium (59)	Pr-134	3.31E+04	2.09E-05	2.06E+04	3.70E+04	1.32E+04	1.00E-08	1.04E-13
Praseodymium (59)	Pr-134m	2.14E+04	3.23E-05	1.33E+04	2.40E+04	8.58E+03	1.00E-08	1.04E-13
Praseodymium (59)	Pr-135	1.52E+04	4.57E-05	9.12E+04	1.68E+04	1.42E+04	1.00E-08	2.45E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	Start Time Total (yrs)	BDCC DL=1 (mg/cm ²)
Praseodymium (59)	Pr-136	2.78E+04	2.49E-05	5.49E+14	4.66E+12	4.62E+12	1.00E-08	4.39E-05
Praseodymium (59)	Pr-137	4.74E+03	1.46E-04	1.27E+05	1.05E+04	9.69E+03	1.00E-08	5.43E-13
Praseodymium (59)	Pr-138	2.51E+05	2.76E-06		1.64E+20	1.64E+20	1.00E-08	1.75E+02
Praseodymium (59)	Pr-138m	2.86E+03	2.42E-04	3.88E+04	1.09E+03	1.06E+03	1.00E-08	9.89E-14
Praseodymium (59)	Pr-139	1.38E+03	5.03E-04	9.22E+03	5.03E+03	3.25E+03	1.00E-08	6.37E-13
Praseodymium (59)	Pr-140	1.07E+05	6.45E-06		8.15E+16	8.15E+16	1.00E-08	2.06E-01
Praseodymium (59)	Pr-142	3.18E+02	2.18E-03	3.94E+02	1.93E+03	3.27E+02	1.00E-08	2.84E-13
Praseodymium (59)	Pr-142m	2.49E+04	2.78E-05	3.10E+04	1.51E+05	2.57E+04	1.00E-08	2.84E-13
Praseodymium (59)	Pr-143	1.86E+01	3.72E-02	2.60E+01	8.00E+02	2.52E+01	1.00E-08	3.75E-13
Praseodymium (59)	Pr-144	2.11E+04	3.29E-05	5.22E+13	8.72E+12	7.47E+12	1.00E-08	9.90E-05
Praseodymium (59)	Pr-144m	5.06E+04	1.37E-05	7.31E+13	1.22E+13	1.05E+13	1.00E-08	5.79E-05
Praseodymium (59)	Pr-145	1.01E+03	6.83E-04	4.22E+03	9.17E+03	2.89E+03	1.00E-08	8.01E-13
Praseodymium (59)	Pr-146	1.51E+04	4.59E-05	1.42E+11	5.51E+09	5.31E+09	1.00E-08	9.97E-08
Praseodymium (59)	Pr-147	2.72E+04	2.55E-05	3.93E+04	1.73E+05	3.21E+04	1.00E-08	3.36E-13
Praseodymium (59)	Pr-148	1.59E+05	4.36E-06		4.29E+18	4.29E+18	1.00E-08	7.75E+00
Praseodymium (59)	Pr-148m	1.81E+05	3.82E-06		1.04E+18	1.04E+18	1.00E-08	1.65E+00
Platinum (78)	Pt-184	2.11E+04	3.29E-05	1.95E+05	1.02E+04	9.70E+03	1.00E-08	1.65E-13
Platinum (78)	Pt-186	2.92E+03	2.37E-04	1.33E+04	1.20E+03	1.10E+03	1.00E-08	1.36E-13
Platinum (78)	Pt-187	2.58E+03	2.68E-04	2.21E+04	2.61E+03	2.33E+03	1.00E-08	3.28E-13
Platinum (78)	Pt-188	2.48E+01	2.79E-02	2.72E+01	1.08E+01	7.74E+00	1.00E-08	1.14E-13
Platinum (78)	Pt-189	5.58E+02	1.24E-03	2.15E+03	9.65E+02	6.66E+02	1.00E-08	4.37E-13
Platinum (78)	Pt-190	1.07E-12	6.50E+11	2.41E-01		2.41E-01	1.00E-08	8.33E-02
Platinum (78)	Pt-191	9.03E+01	7.68E-03	4.18E+02	2.98E+02	1.74E+02	1.00E-08	7.15E-13
Platinum (78)	Pt-193	1.39E-02	5.00E+01	4.62E+01	8.40E+03	4.59E+01	1.00E-08	1.24E-09
Platinum (78)	Pt-193m	5.84E+01	1.19E-02	2.09E+02	5.75E+03	2.02E+02	1.00E-08	1.30E-12
Platinum (78)	Pt-195m	6.29E+01	1.10E-02	1.61E+02	9.06E+02	1.37E+02	1.00E-08	8.22E-13
Platinum (78)	Pt-197	3.05E+02	2.27E-03	1.16E+03	1.13E+04	1.05E+03	1.00E-08	1.32E-12
Platinum (78)	Pt-197m	3.82E+03	1.82E-04	1.25E+04	3.54E+04	9.23E+03	1.00E-08	9.24E-13
Platinum (78)	Pt-199	1.18E+04	5.86E-05	4.40E+04	1.23E+05	3.24E+04	1.00E-08	1.06E-12
Platinum (78)	Pt-200	4.86E+02	1.43E-03	6.45E+02	1.11E+03	4.08E+02	1.00E-08	3.26E-13
Platinum (78)	Pt-202	1.38E+02	5.02E-03	5.14E+01	3.51E+02	4.48E+01	1.00E-08	1.27E-13
Plutonium (94)	Pu-232	1.08E+04	6.41E-05	5.27E+03	1.01E+06	5.24E+03	7.05E+00	2.18E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Plutonium (94)	Pu-234	6.90E+02	1.00E-03	1.82E+02	6.17E+02	1.41E+02	1.00E-08	9.26E-14
Plutonium (94)	Pu-235	1.44E+04	4.81E-05	8.66E+05	1.26E+07	8.10E+05	1.00E-08	2.57E-11
Plutonium (94)	Pu-236	2.42E-01	2.86E+00	2.27E-02	1.84E+01	2.27E-02	1.00E-08	4.28E-14
Plutonium (94)	Pu-237	5.60E+00	1.24E-01	8.41E+01	1.17E+02	4.90E+01	1.00E-08	4.03E-12
Plutonium (94)	Pu-238	7.90E-03	8.77E+01	8.63E-03	1.50E+03	8.63E-03	1.00E-08	5.04E-13
Plutonium (94)	Pu-239	2.87E-05	2.41E+04	7.85E-03	2.92E+03	7.85E-03	1.00E-08	1.27E-10
Plutonium (94)	Pu-240	1.06E-04	6.56E+03	7.85E-03	1.57E+03	7.85E-03	1.00E-08	3.46E-11
Plutonium (94)	Pu-241	4.83E-02	1.44E+01	3.10E-01	1.38E+03	3.10E-01	5.10E+01	3.01E-12
Plutonium (94)	Pu-242	1.85E-06	3.75E+05	8.25E-03	1.60E+03	8.25E-03	1.00E-08	2.10E-09
Plutonium (94)	Pu-243	1.22E+03	5.66E-04	1.99E+04	4.81E+04	1.41E+04	1.00E-08	5.41E-12
Plutonium (94)	Pu-244	8.66E-09	8.00E+07	4.02E-03	2.23E+00	4.02E-03	8.67E+04	2.19E-07
Plutonium (94)	Pu-245	5.78E+02	1.20E-03	1.26E+03	1.19E+03	6.13E+02	1.00E-08	5.04E-13
Plutonium (94)	Pu-246	2.33E+01	2.97E-02	1.36E+01	1.92E+01	7.96E+00	1.00E-08	1.63E-13
Radium (88)	Ra-219	2.19E+09	3.17E-10		3.88E+36	3.88E+36	6.31E-06	7.55E+14
Radium (88)	Ra-220	1.22E+09	5.68E-10		3.59E+41	3.59E+41	7.94E-06	1.26E+20
Radium (88)	Ra-221	7.81E+05	8.88E-07	2.36E+07	2.42E+08	2.15E+07	1.00E-08	1.18E-11
Radium (88)	Ra-222	5.75E+05	1.20E-06	1.61E+04	4.49E+08	1.61E+04	1.61E+00	1.21E-14
Radium (88)	Ra-223	2.21E+01	3.13E-02	2.30E-01	5.05E+01	2.29E-01	1.00E-08	4.48E-15
Radium (88)	Ra-224	6.91E+01	1.00E-02	1.14E+00	4.53E+01	1.12E+00	1.00E-08	7.01E-15
Radium (88)	Ra-225	1.70E+01	4.08E-02	1.32E-01	5.82E+01	1.32E-01	1.00E-08	3.39E-15
Radium (88)	Ra-226	4.33E-04	1.60E+03	7.44E-04	5.33E-01	7.43E-04	1.34E+02	7.52E-13
Radium (88)	Ra-227	8.63E+03	8.03E-05	1.01E+03	4.91E+05	1.00E+03	2.44E-01	5.13E-14
Radium (88)	Ra-228	1.21E-01	5.75E+00	1.46E-03	6.78E-01	1.46E-03	1.00E-08	5.36E-15
Radium (88)	Ra-230	3.92E+03	1.77E-04	3.64E+04	5.24E+03	4.58E+03	1.00E-08	5.22E-13
Rubidium (37)	Rb-77	9.66E+04	7.17E-06	1.82E+06	6.34E+04	6.12E+04	1.00E-08	9.47E-14
Rubidium (37)	Rb-78	2.06E+04	3.36E-05	3.44E+13	3.44E+11	3.40E+11	1.00E-08	2.50E-06
Rubidium (37)	Rb-78m	6.35E+04	1.09E-05	7.14E+14	7.12E+12	7.05E+12	1.00E-08	1.68E-05
Rubidium (37)	Rb-79	1.59E+04	4.36E-05	5.62E+11	5.99E+04	5.99E+04	1.00E-08	5.77E-13
Rubidium (37)	Rb-80	6.54E+05	1.06E-06		4.22E+21	4.22E+21	1.00E-08	1.00E+03
Rubidium (37)	Rb-81	1.33E+03	5.22E-04	4.75E+04	1.96E+03	1.89E+03	1.00E-08	2.23E-13
Rubidium (37)	Rb-81m	1.19E+04	5.80E-05	4.38E+05	1.81E+04	1.74E+04	1.00E-08	2.29E-13
Rubidium (37)	Rb-82	2.86E+05	2.42E-06		1.50E+19	1.50E+19	1.00E-08	8.34E+00

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	Start Time Total (yrs)	BDCC DL=1 (mg/cm ²)
Rubidium (37)	Rb-82m	9.38E+02	7.39E-04	1.30E+04	3.05E+02	2.98E+02	1.00E-08	5.06E-14
Rubidium (37)	Rb-83	2.93E+00	2.36E-01	3.27E+00	5.96E+00	2.11E+00	1.00E-08	1.16E-13
Rubidium (37)	Rb-84	7.72E+00	8.98E-02	4.96E+00	7.92E+00	3.05E+00	1.00E-08	6.44E-14
Rubidium (37)	Rb-84m	1.80E+04	3.85E-05	1.15E+04	1.84E+04	7.10E+03	1.00E-08	6.44E-14
Rubidium (37)	Rb-86	1.36E+01	5.11E-02	8.05E+00	7.34E+01	7.25E+00	1.00E-08	8.92E-14
Rubidium (37)	Rb-86m	3.58E+05	1.93E-06	2.13E+05	1.94E+06	1.92E+05	1.00E-08	8.92E-14
Rubidium (37)	Rb-87	1.41E-11	4.92E+10	1.10E+00	1.26E+04	1.10E+00	1.00E-08	1.32E-02
Rubidium (37)	Rb-88	2.05E+04	3.38E-05	2.52E+13	1.62E+12	1.53E+12	1.00E-08	1.27E-05
Rubidium (37)	Rb-89	2.40E+04	2.88E-05	1.52E+04	3.14E+05	1.45E+04	1.00E-08	1.04E-13
Rubidium (37)	Rb-90	1.38E+05	5.01E-06	3.31E+05	4.66E+07	3.29E+05	1.51E-02	4.15E-13
Rubidium (37)	Rb-90m	8.47E+04	8.18E-06	2.03E+05	2.85E+07	2.01E+05	1.51E-02	4.15E-13
Rhenium (75)	Re-178	2.76E+04	2.51E-05	1.90E+05	2.02E+05	9.80E+04	1.00E-08	1.23E-12
Rhenium (75)	Re-179	1.87E+04	3.71E-05	1.41E+06	3.20E+05	2.61E+05	1.00E-08	4.85E-12
Rhenium (75)	Re-180	1.49E+05	4.64E-06		4.01E+17	4.01E+17	1.00E-08	9.38E-01
Rhenium (75)	Re-181	3.05E+02	2.27E-03	1.03E+03	3.49E+02	2.61E+02	1.00E-08	3.00E-13
Rhenium (75)	Re-182	9.49E+01	7.31E-03	1.15E+02	5.13E+01	3.54E+01	1.00E-08	1.32E-13
Rhenium (75)	Re-182m	4.78E+02	1.45E-03	2.87E+03	3.81E+02	3.36E+02	1.00E-08	2.48E-13
Rhenium (75)	Re-183	3.61E+00	1.92E-01	6.41E+00	2.42E+01	5.07E+00	1.00E-08	4.98E-13
Rhenium (75)	Re-184	6.66E+00	1.04E-01	1.17E+01	7.12E+00	4.42E+00	1.00E-08	2.37E-13
Rhenium (75)	Re-184m	1.50E+00	4.63E-01	1.52E+00	1.85E+00	8.34E-01	1.00E-08	1.99E-13
Rhenium (75)	Re-186	6.80E+01	1.02E-02	7.73E+01	1.40E+03	7.32E+01	1.00E-08	3.89E-13
Rhenium (75)	Re-186m	3.47E-06	2.00E+05	4.49E-01	1.58E+01	4.37E-01	1.69E-01	4.55E-08
Rhenium (75)	Re-187	1.68E-11	4.12E+10	3.43E+02		3.43E+02	1.00E-08	7.40E+00
Rhenium (75)	Re-188	3.57E+02	1.94E-03	4.20E+02	2.15E+03	3.52E+02	1.00E-08	3.59E-13
Rhenium (75)	Re-188m	1.96E+04	3.54E-05	2.31E+04	1.18E+05	1.93E+04	1.00E-08	3.59E-13
Rhenium (75)	Re-189	2.50E+02	2.77E-03	5.41E+02	3.12E+03	4.61E+02	1.00E-08	6.77E-13
Rhenium (75)	Re-190	1.17E+05	5.90E-06		6.85E+16	6.85E+16	1.00E-08	2.15E-01
Rhenium (75)	Re-190m	1.90E+03	3.65E-04	8.51E+03	1.11E+03	9.82E+02	1.00E-08	1.91E-13
Rhodium (45)	Rh-100	2.92E+02	2.37E-03	7.78E+02	1.06E+02	9.32E+01	1.00E-08	6.20E-14
Rhodium (45)	Rh-100m	7.92E+04	8.75E-06	2.14E+05	2.91E+04	2.56E+04	1.00E-08	6.28E-14
Rhodium (45)	Rh-101	2.10E-01	3.30E+00	3.63E+00	3.85E+00	1.87E+00	1.00E-08	1.74E-12
Rhodium (45)	Rh-101m	5.83E+01	1.19E-02	4.70E+02	1.94E+02	1.37E+02	1.00E-08	4.62E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Rhodium (45)	Rh-102	1.22E+00	5.67E-01	2.46E+00	3.13E+00	1.38E+00	1.00E-08	2.23E-13
Rhodium (45)	Rh-102m	1.85E-01	3.74E+00	7.45E-01	4.81E-01	2.92E-01	1.00E-08	3.13E-13
Rhodium (45)	Rh-103m	6.49E+03	1.07E-04	2.87E+06	7.01E+06	2.04E+06	1.00E-08	6.27E-11
Rhodium (45)	Rh-104	5.17E+05	1.34E-06		1.18E+22	1.18E+22	1.00E-08	4.60E+03
Rhodium (45)	Rh-104m	8.39E+04	8.26E-06		6.61E+16	6.61E+16	1.00E-08	1.59E-01
Rhodium (45)	Rh-105	1.72E+02	4.04E-03	7.73E+02	2.08E+03	5.63E+02	1.00E-08	6.68E-13
Rhodium (45)	Rh-106	7.33E+05	9.45E-07		1.99E+22	1.99E+22	1.00E-08	5.58E+03
Rhodium (45)	Rh-106m	2.78E+03	2.49E-04	2.88E+04	9.22E+02	8.94E+02	1.00E-08	6.61E-14
Rhodium (45)	Rh-107	1.68E+04	4.13E-05	2.16E+12	1.19E+11	1.13E+11	1.00E-08	1.39E-06
Rhodium (45)	Rh-108	1.30E+06	5.33E-07		8.95E+23	8.95E+23	1.00E-08	1.44E+05
Rhodium (45)	Rh-109	2.73E+05	2.54E-06	8.02E+05	6.54E+06	7.14E+05	1.00E-08	5.53E-13
Rhodium (45)	Rh-94	3.10E+05	2.24E-06	2.68E+06	1.15E+05	1.11E+05	1.00E-08	6.52E-14
Rhodium (45)	Rh-95	7.26E+04	9.55E-06	5.18E+05	3.40E+04	3.19E+04	1.00E-08	8.10E-14
Rhodium (45)	Rh-95m	1.86E+05	3.73E-06	1.33E+06	8.70E+04	8.17E+04	1.00E-08	8.10E-14
Rhodium (45)	Rh-96	3.68E+04	1.88E-05		1.68E+13	1.68E+13	1.00E-08	8.52E-05
Rhodium (45)	Rh-96m	2.41E+05	2.87E-06		1.56E+14	1.56E+14	1.00E-08	1.20E-04
Rhodium (45)	Rh-97	1.19E+04	5.84E-05	1.38E+05	4.88E+04	3.60E+04	1.00E-08	5.72E-13
Rhodium (45)	Rh-97m	7.88E+03	8.79E-05	6.92E+04	3.10E+03	2.97E+03	1.00E-08	7.09E-14
Rhodium (45)	Rh-98	4.19E+04	1.66E-05		9.66E+13	9.66E+13	1.00E-08	4.39E-04
Rhodium (45)	Rh-99	1.57E+01	4.41E-02	4.81E+01	2.68E+01	1.72E+01	1.00E-08	2.10E-13
Rhodium (45)	Rh-99m	1.29E+03	5.37E-04	3.45E+04	1.90E+03	1.80E+03	1.00E-08	2.67E-13
Radon (86)	Rn-207	3.94E+04	1.76E-05	1.43E+05	1.16E+04	1.07E+04	1.00E-08	1.09E-13
Radon (86)	Rn-209	1.28E+04	5.42E-05	2.33E+03	4.86E+03	1.57E+03	1.00E-08	5.00E-14
Radon (86)	Rn-210	2.53E+03	2.74E-04	6.82E+01	5.64E+02	6.08E+01	1.00E-08	9.80E-15
Radon (86)	Rn-211	4.16E+02	1.67E-03	8.70E+01	1.76E+02	5.82E+01	1.00E-08	5.73E-14
Radon (86)	Rn-212	1.52E+04	4.55E-05	7.39E+01	3.20E+09	7.39E+01	1.00E-08	2.00E-15
Radon (86)	Rn-215	9.50E+12	7.29E-14					
Radon (86)	Rn-216	4.86E+11	1.43E-12					
Radon (86)	Rn-217	4.05E+10	1.71E-11					
Radon (86)	Rn-218	6.24E+08	1.11E-09	1.75E+07	4.87E+11	1.75E+07	1.61E+00	1.19E-14
Radon (86)	Rn-219	5.52E+06	1.26E-07	1.15E+11	5.34E+10	3.65E+10	1.00E-08	2.81E-09
Radon (86)	Rn-220	3.93E+05	1.76E-06	8.33E+04	2.60E+05	6.31E+04	1.00E-08	6.85E-14

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Radon (86)	Rn-222	6.62E+01	1.05E-02	1.86E+00	3.55E+01	1.86E+00	1.62E+00	1.21E-14
Radon (86)	Rn-223	1.50E+04	4.62E-05	1.56E+02	3.41E+04	1.55E+02	1.00E-08	4.47E-15
Ruthenium (44)	Ru-103	6.44E+00	1.08E-01	1.54E+01	1.21E+01	6.79E+00	1.00E-08	2.11E-13
Ruthenium (44)	Ru-105	1.37E+03	5.07E-04	3.52E+03	1.48E+03	1.04E+03	1.00E-08	1.56E-13
Ruthenium (44)	Ru-106	6.77E-01	1.02E+00	3.24E-01	3.55E+00	2.97E-01	1.00E-08	9.03E-14
Ruthenium (44)	Ru-107	9.71E+04	7.13E-06	1.09E+13	5.68E+11	5.40E+11	1.00E-08	1.15E-06
Ruthenium (44)	Ru-108	8.01E+04	8.66E-06		6.84E+16	6.84E+16	1.00E-08	1.79E-01
Ruthenium (44)	Ru-92	9.98E+04	6.94E-06		5.01E+14	5.01E+14	1.00E-08	8.96E-04
Ruthenium (44)	Ru-94	7.03E+03	9.86E-05	6.09E+04	2.62E+03	2.51E+03	1.00E-08	6.52E-14
Ruthenium (44)	Ru-95	3.69E+03	1.88E-04	2.64E+04	1.73E+03	1.62E+03	1.00E-08	8.10E-14
Ruthenium (44)	Ru-97	8.72E+01	7.95E-03	1.01E+03	3.59E+02	2.65E+02	1.00E-08	5.72E-13
Sulfur (16)	S-35	2.89E+00	2.40E-01	3.98E+01	2.28E+05	3.97E+01	1.00E-08	9.34E-13
Sulphur (16)	S-37	7.21E+04	9.61E-06		1.47E+15	1.47E+15	1.00E-08	1.47E-03
Sulfur (16)	S-38	2.14E+03	3.24E-04	8.19E+03	6.54E+02	6.05E+02	1.00E-08	2.09E-14
Antimony (51)	Sb-111	2.91E+05	2.38E-06	1.74E+06	7.04E+05	5.01E+05	1.00E-08	3.70E-13
Antimony (51)	Sb-113	5.46E+04	1.27E-05	1.35E+05	2.12E+05	8.26E+04	1.00E-08	3.31E-13
Antimony (51)	Sb-114	1.04E+05	6.64E-06		2.21E+16	2.21E+16	1.00E-08	4.69E-02
Antimony (51)	Sb-115	1.13E+04	6.11E-05	8.15E+05	1.16E+04	1.15E+04	1.00E-08	2.25E-13
Antimony (51)	Sb-116	2.31E+04	3.01E-05	1.89E+14	1.37E+12	1.36E+12	1.00E-08	1.33E-05
Antimony (51)	Sb-116m	6.04E+03	1.15E-04	1.68E+05	1.87E+03	1.84E+03	1.00E-08	6.87E-14
Antimony (51)	Sb-117	2.17E+03	3.20E-04	2.07E+05	1.17E+04	1.10E+04	1.00E-08	1.16E-12
Antimony (51)	Sb-118	1.01E+05	6.85E-06		1.55E+17	1.55E+17	1.00E-08	3.50E-01
Antimony (51)	Sb-118m	1.21E+03	5.71E-04	1.04E+04	4.50E+02	4.31E+02	1.00E-08	8.12E-14
Antimony (51)	Sb-119	1.59E+02	4.36E-03	3.21E+03	9.09E+03	2.37E+03	1.00E-08	3.44E-12
Antimony (51)	Sb-120	2.29E+04	3.02E-05	3.61E+14	5.86E+12	5.77E+12	1.00E-08	5.86E-05
Antimony (51)	Sb-120m	4.39E+01	1.58E-02	6.36E+01	1.72E+01	1.35E+01	1.00E-08	7.17E-14
Antimony (51)	Sb-122	9.29E+01	7.46E-03	9.09E+01	1.70E+02	5.92E+01	1.00E-08	1.51E-13
Antimony (51)	Sb-122m	8.69E+04	7.97E-06	8.50E+04	1.59E+05	5.54E+04	1.00E-08	1.51E-13
Antimony (51)	Sb-124	4.20E+00	1.65E-01	2.86E+00	2.20E+00	1.24E+00	1.00E-08	7.12E-14
Antimony (51)	Sb-124m	2.35E+05	2.95E-06	2.13E+05	1.64E+05	9.27E+04	1.00E-08	9.49E-14
Antimony (51)	Sb-124n	1.80E+04	3.84E-05	1.64E+04	1.26E+04	7.11E+03	1.00E-08	9.49E-14
Antimony (51)	Sb-125	2.51E-01	2.76E+00	1.51E+00	2.41E+00	9.28E-01	1.00E-08	8.96E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	Start Time Total (yrs)	BDCC DL=1 (mg/cm ²)
Antimony (51)	Sb-126	2.05E+01	3.38E-02	1.33E+01	6.90E+00	4.54E+00	1.00E-08	5.42E-14
Antimony (51)	Sb-126m	1.90E+04	3.64E-05	8.82E+04	4.57E+04	3.01E+04	1.00E-08	3.87E-13
Antimony (51)	Sb-127	6.57E+01	1.05E-02	4.91E+01	8.48E+01	3.11E+01	1.00E-08	1.17E-13
Antimony (51)	Sb-128	6.74E+02	1.03E-03	1.44E+03	2.02E+02	1.77E+02	1.00E-08	6.52E-14
Antimony (51)	Sb-128m	3.50E+04	1.98E-05	2.03E+06	2.86E+05	2.51E+05	1.00E-08	1.78E-12
Antimony (51)	Sb-129	1.38E+03	5.02E-04	1.94E+03	8.16E+02	5.74E+02	1.00E-08	1.04E-13
Antimony (51)	Sb-130	9.22E+03	7.52E-05	1.71E+05	2.61E+03	2.57E+03	1.00E-08	7.04E-14
Antimony (51)	Sb-130m	5.78E+04	1.20E-05		3.67E+14	3.67E+14	1.00E-08	1.60E-03
Antimony (51)	Sb-131	1.58E+04	4.38E-05	1.13E+03	1.54E+04	1.05E+03	1.00E-08	1.69E-14
Antimony (51)	Sb-133	1.46E+05	4.76E-06	4.94E+04	1.34E+05	3.61E+04	1.00E-08	6.40E-14
Scandium (21)	Sc-42m	3.52E+05	1.97E-06		1.58E+19	1.58E+19	1.00E-08	3.66E+00
Scandium (21)	Sc-43	1.56E+03	4.44E-04	1.21E+04	1.42E+03	1.27E+03	1.00E-08	6.79E-14
Scandium (21)	Sc-44	1.53E+03	4.53E-04	7.32E+03	6.56E+02	6.02E+02	1.00E-08	3.36E-14
Scandium (21)	Sc-44m	1.04E+02	6.69E-03	6.28E+01	4.00E+01	2.44E+01	1.00E-08	2.01E-14
Scandium (21)	Sc-46	3.02E+00	2.30E-01	3.82E+00	1.51E+00	1.08E+00	1.00E-08	3.19E-14
Scandium (21)	Sc-47	7.55E+01	9.18E-03	2.29E+02	6.74E+02	1.71E+02	1.00E-08	2.06E-13
Scandium (21)	Sc-48	1.39E+02	4.99E-03	1.47E+02	3.99E+01	3.14E+01	1.00E-08	2.10E-14
Scandium (21)	Sc-49	6.37E+03	1.09E-04	1.31E+05	5.63E+04	3.93E+04	1.00E-08	5.87E-13
Scandium (21)	Sc-50	2.13E+05	3.25E-06		1.12E+18	1.12E+18	1.00E-08	5.11E-01
Selenium (34)	Se-70	8.86E+03	7.82E-05	6.66E+04	1.67E+03	1.63E+03	1.00E-08	2.50E-14
Selenium (34)	Se-71	7.68E+04	9.02E-06	2.88E+05	1.26E+05	8.76E+04	1.00E-08	1.57E-13
Selenium (34)	Se-72	3.01E+01	2.30E-02	6.39E+00	1.47E+01	4.46E+00	1.00E-08	2.07E-14
Selenium (34)	Se-73	8.49E+02	8.16E-04	3.13E+03	6.98E+02	5.71E+02	1.00E-08	9.52E-14
Selenium (34)	Se-73m	9.15E+03	7.57E-05	3.60E+04	7.73E+03	6.37E+03	1.00E-08	9.85E-14
Selenium (34)	Se-75	2.11E+00	3.28E-01	1.62E+00	6.02E+00	1.28E+00	1.00E-08	8.80E-14
Selenium (34)	Se-77m	1.26E+06	5.50E-07		4.08E+25	4.08E+25	1.00E-08	4.84E+06
Selenium (34)	Se-79	2.35E-06	2.95E+05	4.83E-01	6.84E+04	4.83E-01	1.00E-08	3.15E-08
Selenium (34)	Se-79m	9.29E+04	7.46E-06	1.91E+10	2.70E+15	1.91E+10	1.00E-08	3.15E-08
Selenium (34)	Se-81	1.97E+04	3.51E-05	6.37E+13	1.13E+13	9.62E+12	1.00E-08	7.66E-05
Selenium (34)	Se-81m	6.36E+03	1.09E-04	1.33E+05	6.11E+04	4.19E+04	1.00E-08	1.04E-12
Selenium (34)	Se-83	1.63E+04	4.24E-05	6.17E+05	5.00E+05	2.76E+05	1.00E-08	2.73E-12
Selenium (34)	Se-83m	3.12E+05	2.22E-06	1.17E+07	9.48E+06	5.24E+06	1.00E-08	2.70E-12

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	BDCC DL=1 (pCi/cm ²)	Start Time Total (yrs)	BDCC DL=1 (mg/cm ²)
Selenium (34)	Se-84	1.17E+05	5.90E-06	2.06E+10	5.82E+08	5.66E+08	1.00E-08	7.85E-10
Silicon (14)	Si-31	2.32E+03	2.99E-04	2.46E+04	2.90E+04	1.33E+04	1.00E-08	3.45E-13
Silicon (14)	Si-32	5.25E-03	1.32E+02	5.42E-01	1.17E+01	5.18E-01	2.84E-01	6.12E-12
Samarium (62)	Sm-139	1.42E+05	4.89E-06	9.49E+05	5.18E+05	3.35E+05	1.00E-08	6.37E-13
Samarium (62)	Sm-140	2.46E+04	2.82E-05	2.05E+04	3.60E+04	1.31E+04	1.00E-08	1.44E-13
Samarium (62)	Sm-141	3.57E+04	1.94E-05	7.14E+06	4.59E+05	4.31E+05	1.00E-08	3.31E-12
Samarium (62)	Sm-141m	1.61E+04	4.30E-05	3.22E+06	2.07E+05	1.95E+05	1.00E-08	3.30E-12
Samarium (62)	Sm-142	5.02E+03	1.38E-04	4.67E+04	4.26E+03	3.91E+03	1.00E-08	2.14E-13
Samarium (62)	Sm-143	4.16E+04	1.66E-05	5.10E+05	2.03E+05	1.45E+05	1.00E-08	9.69E-13
Samarium (62)	Sm-143m	3.31E+05	2.09E-06	4.06E+06	1.62E+06	1.16E+06	1.00E-08	9.69E-13
Samarium (62)	Sm-145	7.44E-01	9.32E-01	1.11E+01	2.29E+01	7.47E+00	1.00E-08	2.82E-12
Samarium (62)	Sm-146	6.73E-09	1.03E+08	3.22E-02		3.22E-02	1.00E-08	1.36E-06
Samarium (62)	Sm-147	6.54E-12	1.06E+11	3.53E-02		3.53E-02	1.00E-08	1.54E-03
Samarium (62)	Sm-148	9.90E-17	7.00E+15	3.37E-02		3.37E-02	3.57E+15	9.77E+01
Samarium (62)	Sm-151	7.70E-03	9.00E+01	1.68E+01	2.35E+05	1.68E+01	1.00E-08	6.39E-10
Samarium (62)	Sm-153	1.31E+02	5.31E-03	2.92E+02	1.86E+03	2.53E+02	1.00E-08	5.74E-13
Samarium (62)	Sm-155	1.63E+04	4.24E-05	6.03E+05	2.00E+06	4.63E+05	1.00E-08	8.53E-12
Samarium (62)	Sm-156	6.46E+02	1.07E-03	4.27E+02	4.55E+02	2.20E+02	1.00E-08	1.03E-13
Samarium (62)	Sm-157	4.54E+04	1.53E-05	1.21E+05	1.32E+05	6.32E+04	1.00E-08	4.24E-13
Tin (50)	Sn-106	1.90E+05	3.65E-06		1.83E+15	1.83E+15	1.00E-08	1.98E-03
Tin (50)	Sn-108	3.54E+04	1.96E-05	7.54E+05	1.25E+04	1.23E+04	1.00E-08	7.30E-14
Tin (50)	Sn-109	2.02E+04	3.42E-05	4.02E+04	3.00E+04	1.72E+04	1.00E-08	1.80E-13
Tin (50)	Sn-110	1.48E+03	4.69E-04	5.34E+03	7.25E+02	6.38E+02	1.00E-08	9.22E-14
Tin (50)	Sn-111	1.03E+04	6.72E-05	5.73E+04	1.09E+04	9.14E+03	1.00E-08	1.91E-13
Tin (50)	Sn-113	2.20E+00	3.15E-01	5.33E+00	8.39E+00	3.26E+00	1.00E-08	3.25E-13
Tin (50)	Sn-113m	1.70E+04	4.07E-05	4.53E+04	7.12E+04	2.77E+04	1.00E-08	3.57E-13
Tin (50)	Sn-117m	1.84E+01	3.77E-02	4.28E+01	1.17E+02	3.14E+01	1.00E-08	3.87E-13
Tin (50)	Sn-119m	8.63E-01	8.03E-01	6.93E+00	1.36E+02	6.59E+00	1.00E-08	1.76E-12
Tin (50)	Sn-121	2.25E+02	3.09E-03	1.60E+03	2.46E+06	1.60E+03	1.00E-08	1.67E-12
Tin (50)	Sn-121m	1.58E-02	4.39E+01	2.94E+00	2.42E+02	2.90E+00	1.33E-02	4.31E-11
Tin (50)	Sn-123	1.96E+00	3.54E-01	1.76E+00	3.10E+01	1.67E+00	1.00E-08	2.04E-13
Tin (50)	Sn-123m	9.09E+03	7.62E-05	3.97E+05	4.64E+04	4.15E+04	1.00E-08	1.09E-12

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Tin (50)	Sn-125	2.62E+01	2.64E-02	1.30E+01	4.77E+01	1.02E+01	1.00E-08	9.46E-14
Tin (50)	Sn-125m	3.83E+04	1.81E-05	2.30E+05	3.67E+05	1.41E+05	1.00E-08	8.96E-13
Tin (50)	Sn-126	3.01E-06	2.30E+05	3.26E-01	4.53E-01	1.90E-01	5.15E-01	1.54E-08
Tin (50)	Sn-127	2.89E+03	2.40E-04	1.99E+03	1.04E+03	6.81E+02	1.00E-08	5.80E-14
Tin (50)	Sn-127m	8.82E+04	7.86E-06	6.59E+04	1.14E+05	4.17E+04	1.00E-08	1.17E-13
Tin (50)	Sn-128	6.17E+03	1.12E-04	4.86E+04	2.12E+03	2.03E+03	1.00E-08	8.19E-14
Tin (50)	Sn-129	1.63E+05	4.24E-06	2.29E+05	9.58E+04	6.75E+04	1.00E-08	1.03E-13
Tin (50)	Sn-130	9.79E+04	7.08E-06		2.57E+14	2.57E+14	1.00E-08	6.61E-04
Tin (50)	Sn-130m	2.14E+05	3.23E-06	4.36E+09	6.66E+07	6.56E+07	1.00E-08	7.73E-11
Strontium (38)	Sr-79	1.62E+05	4.28E-06	5.16E+12	6.09E+05	6.09E+05	1.00E-08	5.77E-13
Strontium (38)	Sr-80	3.43E+03	2.02E-04	1.55E+04	1.75E+03	1.58E+03	1.00E-08	7.14E-14
Strontium (38)	Sr-81	1.63E+04	4.24E-05	5.85E+05	2.42E+04	2.32E+04	1.00E-08	2.23E-13
Strontium (38)	Sr-82	9.97E+00	6.95E-02	2.67E+00	7.35E+00	1.96E+00	1.00E-08	3.13E-14
Strontium (38)	Sr-83	1.87E+02	3.70E-03	1.59E+02	1.37E+02	7.35E+01	1.00E-08	6.32E-14
Strontium (38)	Sr-85	3.90E+00	1.78E-01	1.13E+01	7.53E+00	4.52E+00	1.00E-08	1.91E-13
Strontium (38)	Sr-85m	5.39E+03	1.29E-04	1.79E+04	8.00E+03	5.52E+03	1.00E-08	1.69E-13
Strontium (38)	Sr-87m	2.16E+03	3.21E-04	1.26E+05	6.35E+03	6.05E+03	1.00E-08	4.73E-13
Strontium (38)	Sr-89	5.01E+00	1.38E-01	3.16E+00	6.54E+01	3.01E+00	1.00E-08	1.04E-13
Strontium (38)	Sr-90	2.41E-02	2.88E+01	5.76E-02	8.11E+00	5.72E-02	1.51E-02	4.15E-13
Strontium (38)	Sr-91	6.30E+02	1.10E-03	3.49E+02	5.09E+02	2.07E+02	1.00E-08	5.80E-14
Strontium (38)	Sr-92	2.28E+03	3.04E-04	4.22E+03	1.27E+03	9.76E+02	1.00E-08	7.64E-14
Strontium (38)	Sr-93	4.91E+04	1.41E-05	6.93E+04	2.02E+05	5.16E+04	1.00E-08	1.90E-13
Strontium (38)	Sr-94	2.90E+05	2.39E-06	2.40E+14	1.20E+13	1.15E+13	1.00E-08	7.21E-06
Tantalum (73)	Ta-170	5.39E+04	1.29E-05	6.95E+04	1.80E+04	1.43E+04	1.00E-08	8.75E-14
Tantalum (73)	Ta-172	9.90E+03	7.00E-05	2.32E+04	1.51E+04	9.15E+03	2.52E-02	3.08E-13
Tantalum (73)	Ta-173	1.93E+03	3.58E-04	6.97E+03	1.78E+03	1.42E+03	1.00E-08	2.46E-13
Tantalum (73)	Ta-174	5.33E+03	1.30E-04	1.27E+05	5.07E+03	4.88E+03	1.00E-08	3.09E-13
Tantalum (73)	Ta-175	5.78E+02	1.20E-03	1.60E+03	3.88E+02	3.12E+02	1.00E-08	1.83E-13
Tantalum (73)	Ta-176	7.50E+02	9.24E-04	4.24E+03	3.35E+02	3.10E+02	1.00E-08	1.41E-13
Tantalum (73)	Ta-177	1.07E+02	6.46E-03	1.66E+03	1.63E+03	8.22E+02	1.00E-08	2.63E-12
Tantalum (73)	Ta-178	3.91E+04	1.77E-05		3.95E+15	3.95E+15	1.00E-08	3.49E-02
Tantalum (73)	Ta-178m	2.57E+03	2.69E-04	5.24E+04	2.13E+03	2.04E+03	1.00E-08	2.74E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Tantalum (73)	Ta-179	3.81E-01	1.82E+00	3.41E+01	5.06E+01	2.04E+01	1.00E-08	1.86E-11
Tantalum (73)	Ta-180	7.45E+02	9.31E-04	2.23E+04	1.59E+04	9.27E+03	1.00E-08	4.35E-12
Tantalum (73)	Ta-182	2.21E+00	3.14E-01	2.82E+00	1.86E+00	1.12E+00	1.00E-08	1.79E-13
Tantalum (73)	Ta-182m	2.30E+04	3.01E-05	2.93E+04	1.94E+04	1.17E+04	1.00E-08	1.79E-13
Tantalum (73)	Ta-183	4.96E+01	1.40E-02	6.09E+01	1.64E+02	4.44E+01	1.00E-08	3.18E-13
Tantalum (73)	Ta-184	6.98E+02	9.93E-04	1.76E+03	4.12E+02	3.34E+02	1.00E-08	1.71E-13
Tantalum (73)	Ta-185	7.37E+03	9.40E-05	2.46E+04	3.06E+04	1.36E+04	1.00E-08	6.63E-13
Tantalum (73)	Ta-186	3.47E+04	2.00E-05	2.12E+15	2.68E+13	2.65E+13	1.00E-08	2.76E-04
Terbium (65)	Tb-146	9.50E+05	7.29E-07	7.80E+05	3.46E+05	2.40E+05	1.00E-08	7.15E-14
Terbium (65)	Tb-147	3.70E+03	1.87E-04	5.40E+03	8.70E+02	7.49E+02	1.00E-08	5.77E-14
Terbium (65)	Tb-147m	1.95E+05	3.56E-06	3.17E+05	9.94E+04	7.57E+04	1.00E-08	1.11E-13
Terbium (65)	Tb-148	6.07E+03	1.14E-04	1.66E+04	2.40E+03	2.09E+03	1.00E-08	9.91E-14
Terbium (65)	Tb-148m	1.66E+05	4.19E-06	5.63E+05	3.29E+17	5.63E+05	1.00E-08	9.76E-13
Terbium (65)	Tb-149	1.47E+03	4.70E-04	2.86E+03	6.86E+02	5.53E+02	1.00E-08	1.08E-13
Terbium (65)	Tb-149m	8.76E+04	7.91E-06	2.16E+05	1.42E+05	8.59E+04	1.00E-08	2.84E-13
Terbium (65)	Tb-150	1.74E+03	3.97E-04	1.40E+04	7.04E+02	6.71E+02	1.00E-08	1.12E-13
Terbium (65)	Tb-150m	6.28E+04	1.10E-05	5.41E+09	5.30E+16	5.41E+09	1.00E-08	2.51E-08
Terbium (65)	Tb-151	3.45E+02	2.01E-03	1.06E+03	3.12E+02	2.41E+02	1.00E-08	2.05E-13
Terbium (65)	Tb-151m	8.74E+05	7.93E-07	2.81E+06	8.45E+05	6.50E+05	1.00E-08	2.18E-13
Terbium (65)	Tb-152	3.47E+02	2.00E-03	8.54E+02	2.23E+02	1.77E+02	1.00E-08	1.50E-13
Terbium (65)	Tb-152m	8.67E+04	7.99E-06	2.70E+05	7.04E+04	5.58E+04	1.00E-08	1.90E-13
Terbium (65)	Tb-153	1.08E+02	6.41E-03	3.94E+02	2.65E+02	1.58E+02	1.00E-08	4.35E-13
Terbium (65)	Tb-154	2.82E+02	2.45E-03	8.06E+02	1.25E+02	1.08E+02	1.00E-08	1.14E-13
Terbium (65)	Tb-155	4.75E+01	1.46E-02	3.06E+02	2.67E+02	1.43E+02	1.00E-08	9.02E-13
Terbium (65)	Tb-156	4.73E+01	1.47E-02	7.22E+01	2.36E+01	1.78E+01	1.00E-08	1.14E-13
Terbium (65)	Tb-156m	2.49E+02	2.79E-03	3.32E+02	1.22E+02	8.91E+01	1.00E-08	1.08E-13
Terbium (65)	Tb-156n	1.15E+03	6.05E-04	1.62E+03	5.70E+02	4.22E+02	1.00E-08	1.11E-13
Terbium (65)	Tb-157	9.76E-03	7.10E+01	4.31E+01	2.22E+02	3.61E+01	1.00E-08	1.13E-09
Terbium (65)	Tb-158	3.85E-03	1.80E+02	1.56E+00	1.19E+00	6.74E-01	1.00E-08	5.37E-11
Terbium (65)	Tb-160	3.50E+00	1.98E-01	3.79E+00	3.04E+00	1.69E+00	1.00E-08	1.50E-13
Terbium (65)	Tb-161	3.66E+01	1.89E-02	8.12E+01	1.08E+03	7.55E+01	1.00E-08	6.44E-13
Terbium (65)	Tb-162	4.79E+04	1.45E-05		4.82E+14	4.82E+14	1.00E-08	3.16E-03

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Terbium (65)	Tb-163	1.87E+04	3.71E-05	3.38E+13	4.84E+11	4.77E+11	1.00E-08	8.08E-06
Terbium (65)	Tb-164	1.21E+05	5.71E-06		8.70E+16	8.70E+16	1.00E-08	2.28E-01
Terbium (65)	Tb-165	1.73E+05	4.01E-06	2.67E+06	2.26E+06	1.23E+06	1.00E-08	2.27E-12
Technetium (43)	Tc-101	2.57E+04	2.70E-05	1.87E+15	5.04E+13	4.91E+13	1.00E-08	3.75E-04
Technetium (43)	Tc-102	4.14E+06	1.67E-07		1.85E+27	1.85E+27	1.00E-08	8.86E+07
Technetium (43)	Tc-102m	8.37E+04	8.28E-06		5.36E+15	5.36E+15	1.00E-08	1.27E-02
Technetium (43)	Tc-104	1.99E+04	3.48E-05	2.29E+13	4.55E+11	4.46E+11	1.00E-08	4.52E-06
Technetium (43)	Tc-105	4.79E+04	1.45E-05	1.23E+05	5.20E+04	3.66E+04	1.00E-08	1.56E-13
Technetium (43)	Tc-91	1.16E+05	5.97E-06	1.20E+08	9.99E+08	1.07E+08	1.00E-08	1.62E-10
Technetium (43)	Tc-91m	1.10E+05	6.28E-06	9.15E+05	7.79E+06	8.19E+05	1.00E-08	1.31E-12
Technetium (43)	Tc-92	8.57E+04	8.09E-06		3.08E+15	3.08E+15	1.00E-08	6.42E-03
Technetium (43)	Tc-93	2.21E+03	3.14E-04	5.61E+04	1.39E+03	1.35E+03	1.00E-08	1.11E-13
Technetium (43)	Tc-93m	8.37E+03	8.28E-05	1.73E+05	3.89E+03	3.81E+03	1.00E-08	8.21E-14
Technetium (43)	Tc-94	1.24E+03	5.57E-04	1.11E+04	4.42E+02	4.25E+02	1.00E-08	6.24E-14
Technetium (43)	Tc-94m	7.00E+03	9.89E-05	1.16E+05	3.27E+03	3.18E+03	1.00E-08	8.29E-14
Technetium (43)	Tc-95	3.04E+02	2.28E-03	3.04E+03	3.62E+02	3.23E+02	1.00E-08	1.96E-13
Technetium (43)	Tc-95m	4.15E+00	1.67E-01	1.31E+01	5.59E+00	3.92E+00	1.00E-08	1.74E-13
Technetium (43)	Tc-96	5.91E+01	1.17E-02	9.68E+01	2.23E+01	1.82E+01	1.00E-08	5.72E-14
Technetium (43)	Tc-96m	7.07E+03	9.80E-05	1.17E+04	2.68E+03	2.18E+03	1.00E-08	5.74E-14
Technetium (43)	Tc-97	2.67E-07	2.60E+06	2.39E+01	1.96E+02	2.13E+01	1.00E-08	1.50E-05
Technetium (43)	Tc-97m	2.81E+00	2.47E-01	8.77E+00	6.10E+02	8.65E+00	1.00E-08	5.80E-13
Technetium (43)	Tc-98	1.65E-07	4.20E+06	9.30E-01	6.66E-01	3.88E-01	1.00E-08	4.47E-07
Technetium (43)	Tc-99	3.28E-06	2.11E+05	2.51E+00	1.36E+04	2.51E+00	1.00E-08	1.47E-07
Technetium (43)	Tc-99m	1.01E+03	6.87E-04	7.84E+04	7.90E+03	7.18E+03	1.00E-08	1.37E-12
Tellurium (52)	Te-113	2.14E+05	3.23E-06	5.30E+05	8.34E+05	3.24E+05	1.00E-08	3.31E-13
Tellurium (52)	Te-114	2.40E+04	2.89E-05	1.80E+14	1.36E+12	1.35E+12	1.00E-08	1.24E-05
Tellurium (52)	Te-115	6.28E+04	1.10E-05	3.35E+10	4.77E+08	4.71E+08	1.00E-08	1.67E-09
Tellurium (52)	Te-115m	5.44E+04	1.27E-05	2.80E+10	3.99E+08	3.93E+08	1.00E-08	1.62E-09
Tellurium (52)	Te-116	2.44E+03	2.84E-04	1.85E+04	9.68E+02	9.20E+02	1.00E-08	8.49E-14
Tellurium (52)	Te-117	5.87E+03	1.18E-04	1.45E+05	3.24E+03	3.17E+03	1.00E-08	1.23E-13
Tellurium (52)	Te-118	4.22E+01	1.64E-02	2.31E+01	4.27E+01	1.50E+01	1.00E-08	8.13E-14
Tellurium (52)	Te-119	3.78E+02	1.83E-03	2.54E+03	4.58E+02	3.88E+02	1.00E-08	2.37E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Tellurium (52)	Te-119m	5.38E+01	1.29E-02	1.21E+02	3.44E+01	2.68E+01	1.00E-08	1.15E-13
Tellurium (52)	Te-121	1.32E+01	5.25E-02	5.28E+01	2.15E+01	1.53E+01	1.00E-08	2.72E-13
Tellurium (52)	Te-121m	1.64E+00	4.22E-01	1.31E+00	2.73E+00	8.85E-01	1.00E-08	1.26E-13
Tellurium (52)	Te-123	1.16E-15	6.00E+14	1.52E+00	3.61E+04	1.52E+00	3.84E-07	3.13E+02
Tellurium (52)	Te-123m	2.12E+00	3.27E-01	2.91E+00	1.63E+01	2.47E+00	1.00E-08	2.78E-13
Tellurium (52)	Te-125m	4.41E+00	1.57E-01	8.26E+00	1.49E+02	7.83E+00	1.00E-08	4.31E-13
Tellurium (52)	Te-127	6.49E+02	1.07E-03	6.38E+03	5.52E+04	5.72E+03	1.00E-08	2.17E-12
Tellurium (52)	Te-127m	2.32E+00	2.99E-01	1.60E+00	1.22E+02	1.58E+00	1.00E-08	1.68E-13
Tellurium (52)	Te-129	5.23E+03	1.32E-04	1.39E+05	4.03E+04	3.12E+04	1.00E-08	1.49E-12
Tellurium (52)	Te-129m	7.53E+00	9.21E-02	3.96E+00	5.12E+01	3.67E+00	1.00E-08	1.22E-13
Tellurium (52)	Te-131	1.46E+04	4.76E-05	1.05E+03	3.56E+04	1.02E+03	1.00E-08	1.78E-14
Tellurium (52)	Te-131m	2.02E+02	3.42E-03	1.34E+01	9.87E+01	1.18E+01	1.00E-08	1.49E-14
Tellurium (52)	Te-132	7.89E+01	8.78E-03	3.10E+01	2.94E+01	1.51E+01	1.00E-08	4.90E-14
Tellurium (52)	Te-133	2.91E+04	2.38E-05	9.98E+03	3.92E+04	7.95E+03	1.00E-08	7.04E-14
Tellurium (52)	Te-133m	6.57E+03	1.05E-04	2.13E+03	2.23E+03	1.09E+03	1.00E-08	4.28E-14
Tellurium (52)	Te-134	8.71E+03	7.95E-05	7.30E+04	2.35E+03	2.27E+03	1.00E-08	6.78E-14
Thorium (90)	Th-223	3.64E+07	1.90E-08		6.64E+32	6.64E+32	6.31E-06	7.89E+12
Thorium (90)	Th-224	2.08E+07	3.33E-08		3.82E+32	3.82E+32	7.94E-06	7.98E+12
Thorium (90)	Th-226	1.19E+04	5.82E-05	3.34E+02	9.30E+06	3.34E+02	1.61E+00	1.23E-14
Thorium (90)	Th-227	1.35E+01	5.12E-02	1.32E-01	2.39E+01	1.31E-01	1.00E-08	4.27E-15
Thorium (90)	Th-228	3.63E-01	1.91E+00	1.07E-02	7.86E-01	1.06E-02	8.78E-03	1.29E-14
Thorium (90)	Th-229	9.44E-05	7.34E+03	2.51E-03	2.64E+00	2.51E-03	4.98E-01	1.18E-11
Thorium (90)	Th-230	9.19E-06	7.54E+04	7.06E-04	5.68E-01	7.05E-04	8.85E+03	3.42E-11
Thorium (90)	Th-231	2.38E+02	2.91E-03	1.14E+03	1.40E+04	1.05E+03	1.00E-08	1.98E-12
Thorium (90)	Th-232	4.93E-11	1.41E+10	1.06E-03	4.05E-01	1.06E-03	1.76E+02	9.65E-06
Thorium (90)	Th-233	1.63E+04	4.24E-05	2.80E+04	7.21E+04	2.01E+04	1.00E-08	5.58E-13
Thorium (90)	Th-234	1.05E+01	6.60E-02	5.07E+00	7.65E+01	4.75E+00	1.00E-08	2.06E-13
Thorium (90)	Th-235	5.13E+04	1.35E-05	9.52E+10	2.23E+11	9.50E+10	4.49E+05	8.45E-07
Thorium (90)	Th-236	9.71E+03	7.13E-05	1.88E+05	8.85E+03	8.45E+03	1.00E-08	3.98E-13
Titanium (22)	Ti-44	1.16E-02	6.00E+01	2.88E-01	4.07E-01	1.69E-01	2.37E-03	1.25E-12
Titanium (22)	Ti-45	1.97E+03	3.52E-04	2.22E+04	2.03E+03	1.86E+03	1.00E-08	8.24E-14
Titanium (22)	Ti-51	6.32E+04	1.10E-05		4.11E+16	4.11E+16	1.00E-08	6.44E-02

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Titanium (22)	Ti-52	2.14E+05	3.23E-06		6.06E+16	6.06E+16	1.00E-08	2.85E-02
Thallium (81)	Tl-190	1.40E+05	4.95E-06	5.85E+06	5.92E+04	5.86E+04	1.00E-08	1.54E-13
Thallium (81)	Tl-190m	9.84E+04	7.04E-06	4.11E+06	4.16E+04	4.12E+04	1.00E-08	1.54E-13
Thallium (81)	Tl-194	1.10E+04	6.28E-05	3.91E+05	1.06E+04	1.04E+04	1.00E-08	3.53E-13
Thallium (81)	Tl-194m	1.11E+04	6.24E-05	4.76E+05	4.11E+03	4.07E+03	1.00E-08	1.38E-13
Thallium (81)	Tl-195	5.23E+03	1.32E-04	2.73E+04	3.48E+03	3.08E+03	1.00E-08	2.23E-13
Thallium (81)	Tl-196	3.30E+03	2.10E-04	1.16E+05	1.71E+03	1.69E+03	1.00E-08	1.94E-13
Thallium (81)	Tl-197	2.14E+03	3.24E-04	1.31E+04	3.95E+03	3.04E+03	1.00E-08	5.43E-13
Thallium (81)	Tl-198	1.15E+03	6.05E-04	2.87E+04	5.62E+02	5.51E+02	1.00E-08	1.85E-13
Thallium (81)	Tl-198m	3.25E+03	2.13E-04	6.58E+04	1.46E+03	1.43E+03	1.00E-08	1.69E-13
Thallium (81)	Tl-199	8.18E+02	8.47E-04	5.31E+04	3.19E+03	3.01E+03	1.00E-08	1.42E-12
Thallium (81)	Tl-200	2.33E+02	2.98E-03	2.13E+03	1.70E+02	1.58E+02	1.00E-08	2.63E-13
Thallium (81)	Tl-201	8.33E+01	8.32E-03	1.48E+03	9.37E+02	5.74E+02	1.00E-08	2.69E-12
Thallium (81)	Tl-202	2.07E+01	3.35E-02	8.35E+01	4.22E+01	2.80E+01	1.00E-08	5.31E-13
Thallium (81)	Tl-204	1.83E-01	3.78E+00	1.54E+00	8.96E+01	1.51E+00	1.00E-08	3.26E-12
Thallium (81)	Tl-206	8.67E+04	7.99E-06		1.88E+17	1.88E+17	1.00E-08	8.65E-01
Thallium (81)	Tl-206m	9.74E+04	7.12E-06		1.48E+16	1.48E+16	1.00E-08	6.06E-02
Thallium (81)	Tl-207	7.64E+04	9.08E-06		1.89E+17	1.89E+17	1.00E-08	9.96E-01
Thallium (81)	Tl-208	1.19E+05	5.81E-06		4.21E+16	4.21E+16	1.00E-08	1.42E-01
Thallium (81)	Tl-209	1.69E+05	4.11E-06	5.10E+06	5.24E+07	4.65E+06	1.00E-08	1.12E-11
Thallium (81)	Tl-210	2.80E+05	2.47E-06	7.86E+03	2.19E+08	7.86E+03	1.61E+00	1.14E-14
Thulium (69)	Tm-161	1.21E+04	5.75E-05	2.18E+05	1.11E+04	1.05E+04	1.00E-08	2.73E-13
Thulium (69)	Tm-162	1.68E+04	4.13E-05	1.97E+12	2.25E+10	2.23E+10	1.00E-08	4.17E-07
Thulium (69)	Tm-163	3.35E+03	2.07E-04	1.04E+05	2.42E+03	2.37E+03	1.00E-08	2.23E-13
Thulium (69)	Tm-164	1.82E+05	3.81E-06		1.47E+18	1.47E+18	1.00E-08	2.57E+00
Thulium (69)	Tm-165	2.02E+02	3.43E-03	9.30E+02	3.24E+02	2.41E+02	1.00E-08	3.81E-13
Thulium (69)	Tm-166	7.88E+02	8.79E-04	4.92E+03	3.93E+02	3.64E+02	1.00E-08	1.49E-13
Thulium (69)	Tm-167	2.73E+01	2.53E-02	7.81E+01	1.83E+02	5.48E+01	1.00E-08	6.49E-13
Thulium (69)	Tm-168	2.72E+00	2.55E-01	4.91E+00	2.22E+00	1.53E+00	1.00E-08	1.83E-13
Thulium (69)	Tm-170	1.97E+00	3.52E-01	2.86E+00	8.19E+01	2.76E+00	1.00E-08	4.63E-13
Thulium (69)	Tm-171	3.61E-01	1.92E+00	1.82E+01	2.00E+03	1.80E+01	1.00E-08	1.66E-11
Thulium (69)	Tm-172	9.55E+01	7.26E-03	9.30E+01	1.76E+02	6.08E+01	1.00E-08	2.13E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Thulium (69)	Tm-173	7.37E+02	9.41E-04	4.09E+03	1.70E+03	1.20E+03	1.00E-08	5.48E-13
Thulium (69)	Tm-174	6.75E+04	1.03E-05		1.65E+15	1.65E+15	1.00E-08	8.26E-03
Thulium (69)	Tm-175	2.40E+04	2.89E-05	8.96E+04	5.78E+05	7.76E+04	1.00E-08	1.10E-12
Thulium (69)	Tm-176	1.97E+05	3.52E-06		7.21E+18	7.21E+18	1.00E-08	1.25E+01
Uranium (92)	U-227	3.31E+05	2.09E-06		2.03E+20	2.03E+20	1.00E-08	2.70E+02
Uranium (92)	U-228	4.00E+04	1.73E-05		2.52E+16	2.52E+16	1.00E-08	2.78E-01
Uranium (92)	U-230	1.22E+01	5.70E-02	2.18E-01	5.65E+02	2.18E-01	1.00E-08	7.99E-15
Uranium (92)	U-231	6.02E+01	1.15E-02	2.81E+02	8.05E+02	2.08E+02	1.00E-08	1.55E-12
Uranium (92)	U-232	1.01E-02	6.89E+01	3.78E-03	7.25E-01	3.76E-03	7.05E+00	1.68E-13
Uranium (92)	U-233	4.35E-06	1.59E+05	2.73E-03	3.06E+00	2.73E-03	3.36E+04	2.83E-10
Uranium (92)	U-234	2.82E-06	2.46E+05	1.08E-03	8.81E-01	1.08E-03	1.85E+05	1.73E-10
Uranium (92)	U-235	9.84E-10	7.04E+08	1.83E-03	1.27E+00	1.82E-03	4.49E+05	8.45E-07
Uranium (92)	U-235m	1.40E+04	4.95E-05	2.60E+10	1.80E+13	2.60E+10	4.49E+05	8.45E-07
Uranium (92)	U-236	2.96E-08	2.34E+07	4.13E-02	2.46E+02	4.13E-02	1.00E-08	6.39E-07
Uranium (92)	U-237	3.75E+01	1.85E-02	7.99E+01	2.72E+02	6.18E+01	1.00E-08	7.58E-13
Uranium (92)	U-238	1.55E-10	4.47E+09	6.29E-04	4.87E-01	6.28E-04	3.52E+06	1.87E-06
Uranium (92)	U-239	1.55E+04	4.46E-05	3.14E+04	8.56E+04	2.30E+04	1.00E-08	6.86E-13
Uranium (92)	U-240	4.31E+02	1.61E-03	6.36E+02	1.01E+03	3.90E+02	1.00E-08	4.22E-13
Uranium (92)	U-242	2.17E+04	3.20E-05	9.68E+07	2.95E+12	9.68E+07	1.00E-08	2.10E-09
Vanadium (23)	V-47	1.12E+04	6.20E-05	3.02E+05	9.50E+03	9.21E+03	1.00E-08	7.51E-14
Vanadium (23)	V-48	1.58E+01	4.38E-02	1.41E+01	5.21E+00	3.81E+00	1.00E-08	2.24E-14
Vanadium (23)	V-49	7.67E-01	9.04E-01	1.28E+02		1.28E+02	1.00E-08	1.59E-11
Vanadium (23)	V-50	4.62E-18	1.50E+17	6.03E-01	6.97E-01	3.23E-01	1.13E+02	6.79E+03
Vanadium (23)	V-52	9.73E+04	7.12E-06		4.95E+16	4.95E+16	1.00E-08	5.14E-02
Vanadium (23)	V-53	2.26E+05	3.06E-06		3.84E+18	3.84E+18	1.00E-08	1.75E+00
Tungsten (74)	W-177	2.76E+03	2.51E-04	2.86E+04	2.71E+03	2.47E+03	1.00E-08	3.08E-13
Tungsten (74)	W-178	1.17E+01	5.92E-02	8.07E+01	8.58E+01	4.16E+01	1.00E-08	1.23E-12
Tungsten (74)	W-179	9.83E+03	7.05E-05	7.42E+05	1.68E+05	1.37E+05	1.00E-08	4.85E-12
Tungsten (74)	W-179m	5.69E+04	1.22E-05	4.30E+06	9.77E+05	7.96E+05	1.00E-08	4.86E-12
Tungsten (74)	W-181	2.09E+00	3.32E-01	4.77E+01	6.25E+01	2.70E+01	1.00E-08	4.55E-12
Tungsten (74)	W-185	3.37E+00	2.06E-01	1.30E+01	1.86E+04	1.30E+01	1.00E-08	1.39E-12
Tungsten (74)	W-185m	2.28E+05	3.04E-06	8.81E+05	1.26E+09	8.80E+05	1.00E-08	1.39E-12

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Tungsten (74)	W-187	2.56E+02	2.71E-03	7.25E+02	5.18E+02	3.02E+02	1.00E-08	4.28E-13
Tungsten (74)	W-188	3.62E+00	1.91E-01	1.76E+00	2.22E+01	1.63E+00	1.00E-08	1.65E-13
Tungsten (74)	W-190	1.21E+04	5.71E-05	5.15E+09	1.37E+08	1.33E+08	1.00E-08	4.05E-09
Xenon (54)	Xe-120	9.11E+03	7.61E-05	5.02E+04	2.81E+03	2.66E+03	1.00E-08	6.81E-14
Xenon (54)	Xe-121	9.08E+03	7.63E-05	3.06E+04	3.49E+03	3.13E+03	1.00E-08	8.10E-14
Xenon (54)	Xe-122	3.02E+02	2.29E-03		2.45E+02	2.45E+02	1.00E-08	1.92E-13
Xenon (54)	Xe-123	2.92E+03	2.37E-04	2.04E+04	3.41E+03	2.92E+03	1.00E-08	2.39E-13
Xenon (54)	Xe-125	3.59E+02	1.93E-03	4.36E+01	1.15E+03	4.20E+01	1.00E-08	2.84E-14
Xenon (54)	Xe-127	6.95E+00	9.97E-02		2.42E+01	2.42E+01	1.00E-08	8.60E-13
Xenon (54)	Xe-127m	3.16E+05	2.19E-06		1.10E+06	1.10E+06	1.00E-08	8.60E-13
Xenon (54)	Xe-129m	2.85E+01	2.43E-02		6.10E+02	6.10E+02	1.00E-08	5.36E-12
Xenon (54)	Xe-131m	2.14E+01	3.24E-02		1.17E+03	1.17E+03	1.00E-08	1.39E-11
Xenon (54)	Xe-133	4.82E+01	1.44E-02		1.06E+03	1.06E+03	1.00E-08	5.67E-12
Xenon (54)	Xe-133m	1.16E+02	6.00E-03		1.36E+03	1.36E+03	1.00E-08	3.03E-12
Xenon (54)	Xe-135	6.64E+02	1.04E-03	1.89E+09	2.37E+03	2.37E+03	1.00E-08	9.35E-13
Xenon (54)	Xe-135m	2.38E+04	2.91E-05	6.77E+10	8.55E+04	8.55E+04	1.00E-08	9.41E-13
Xenon (54)	Xe-137	9.54E+04	7.26E-06	7.14E+05	6.84E+06	6.46E+05	1.00E-08	1.80E-12
Xenon (54)	Xe-138	2.59E+04	2.68E-05	4.57E+05	1.02E+04	9.99E+03	1.00E-08	1.03E-13
Yttrium (39)	Y-81	3.10E+05	2.23E-06	1.11E+07	4.59E+05	4.41E+05	1.00E-08	2.23E-13
Yttrium (39)	Y-83	5.14E+04	1.35E-05	4.35E+04	3.76E+04	2.02E+04	1.00E-08	6.31E-14
Yttrium (39)	Y-83m	1.28E+05	5.42E-06	1.08E+05	9.34E+04	5.01E+04	1.00E-08	6.31E-14
Yttrium (39)	Y-84m	9.22E+03	7.52E-05	1.16E+05	2.13E+03	2.09E+03	1.00E-08	3.70E-14
Yttrium (39)	Y-85	2.27E+03	3.06E-04	5.54E+03	1.20E+03	9.83E+02	1.00E-08	7.16E-14
Yttrium (39)	Y-85m	1.25E+03	5.55E-04	2.23E+03	6.34E+02	4.93E+02	1.00E-08	6.52E-14
Yttrium (39)	Y-86	4.12E+02	1.68E-03	7.63E+02	1.11E+02	9.69E+01	1.00E-08	3.93E-14
Yttrium (39)	Y-86m	7.59E+03	9.13E-05	1.34E+04	1.94E+03	1.69E+03	1.00E-08	3.73E-14
Yttrium (39)	Y-87	7.61E+01	9.11E-03	2.29E+02	9.39E+01	6.66E+01	1.00E-08	1.48E-13
Yttrium (39)	Y-87m	4.54E+02	1.53E-03	9.99E+02	4.04E+02	2.88E+02	1.00E-08	1.07E-13
Yttrium (39)	Y-88	2.37E+00	2.92E-01	3.67E+00	9.68E-01	7.66E-01	1.00E-08	5.52E-14
Yttrium (39)	Y-89m	1.40E+06	4.97E-07		3.76E+23	3.76E+23	1.00E-08	4.65E+04
Yttrium (39)	Y-90	9.47E+01	7.32E-03	5.79E+01	7.68E+02	5.38E+01	1.00E-08	9.92E-14
Yttrium (39)	Y-90m	1.90E+03	3.64E-04	1.09E+03	2.38E+03	7.50E+02	1.00E-08	6.88E-14

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Yttrium (39)	Y-91	4.32E+00	1.60E-01	3.03E+00	5.26E+01	2.86E+00	1.00E-08	1.17E-13
Yttrium (39)	Y-91m	7.33E+03	9.46E-05	5.11E+03	1.13E+04	3.51E+03	1.00E-08	8.46E-14
Yttrium (39)	Y-92	1.71E+03	4.04E-04	5.71E+03	4.00E+03	2.35E+03	1.00E-08	2.45E-13
Yttrium (39)	Y-93	5.96E+02	1.16E-03	8.43E+02	2.45E+03	6.27E+02	1.00E-08	1.90E-13
Yttrium (39)	Y-94	1.95E+04	3.56E-05	1.73E+13	8.66E+11	8.25E+11	1.00E-08	7.72E-06
Yttrium (39)	Y-95	3.54E+04	1.96E-05	4.07E+04	2.29E+04	1.46E+04	1.00E-08	7.64E-14
Ytterbium (70)	Yb-162	1.93E+04	3.59E-05	3.11E+11	3.59E+09	3.55E+09	1.00E-08	5.78E-08
Ytterbium (70)	Yb-163	3.30E+04	2.10E-05	1.02E+06	2.38E+04	2.33E+04	1.00E-08	2.23E-13
Ytterbium (70)	Yb-164	4.81E+03	1.44E-04	8.90E+04	5.16E+03	4.87E+03	1.00E-08	3.23E-13
Ytterbium (70)	Yb-165	3.68E+04	1.88E-05	1.69E+05	5.88E+04	4.36E+04	1.00E-08	3.80E-13
Ytterbium (70)	Yb-166	1.07E+02	6.47E-03	1.52E+02	5.12E+01	3.83E+01	1.00E-08	1.15E-13
Ytterbium (70)	Yb-167	2.08E+04	3.33E-05	5.95E+04	1.40E+05	4.17E+04	1.00E-08	6.49E-13
Ytterbium (70)	Yb-169	7.90E+00	8.77E-02	1.62E+01	2.39E+01	9.67E+00	1.00E-08	4.01E-13
Ytterbium (70)	Yb-175	6.04E+01	1.15E-02	2.27E+02	1.46E+03	1.96E+02	1.00E-08	1.10E-12
Ytterbium (70)	Yb-177	3.18E+03	2.18E-04	8.38E+03	1.11E+04	4.78E+03	1.00E-08	5.16E-13
Ytterbium (70)	Yb-178	4.92E+03	1.41E-04	5.05E+04	1.84E+04	1.35E+04	1.00E-08	9.45E-13
Ytterbium (70)	Yb-179	4.55E+04	1.52E-05	3.47E+05	5.10E+05	2.06E+05	1.00E-08	1.57E-12
Zinc (30)	Zn-60	1.53E+05	4.53E-06	1.95E+12	1.97E+10	1.95E+10	1.00E-08	1.48E-08
Zinc (30)	Zn-61	2.45E+05	2.83E-06	3.69E+06	2.66E+05	2.49E+05	1.00E-08	1.20E-13
Zinc (30)	Zn-62	6.61E+02	1.05E-03	1.22E+03	3.86E+02	2.93E+02	1.00E-08	5.34E-14
Zinc (30)	Zn-63	9.47E+03	7.32E-05	2.02E+05	7.28E+03	7.03E+03	1.00E-08	9.08E-14
Zinc (30)	Zn-65	1.04E+00	6.69E-01	7.61E-01	2.67E+00	5.92E-01	1.00E-08	7.21E-14
Zinc (30)	Zn-69	6.46E+03	1.07E-04	3.53E+05	2.76E+05	1.55E+05	1.00E-08	3.21E-12
Zinc (30)	Zn-69m	4.41E+02	1.57E-03	2.10E+03	9.40E+02	6.49E+02	1.00E-08	1.97E-13
Zinc (30)	Zn-71	1.49E+05	4.66E-06		9.98E+17	9.98E+17	1.00E-08	9.25E-01
Zinc (30)	Zn-71m	1.53E+03	4.52E-04	1.12E+04	8.88E+02	8.23E+02	1.00E-08	7.39E-14
Zinc (30)	Zn-72	1.31E+02	5.31E-03	8.97E+01	4.46E+01	2.98E+01	1.00E-08	3.19E-14
Zirconium (40)	Zr-85	4.63E+04	1.50E-05	8.33E+04	2.35E+04	1.83E+04	1.00E-08	6.53E-14
Zirconium (40)	Zr-86	3.68E+02	1.88E-03	3.58E+02	9.19E+01	7.31E+01	1.00E-08	3.32E-14
Zirconium (40)	Zr-87	3.61E+03	1.92E-04	6.39E+03	1.63E+03	1.30E+03	1.00E-08	6.06E-14
Zirconium (40)	Zr-88	3.03E+00	2.28E-01	4.01E+00	1.26E+00	9.60E-01	1.00E-08	5.40E-14
Zirconium (40)	Zr-89	7.74E+01	8.95E-03	1.72E+02	6.28E+01	4.60E+01	1.00E-08	1.03E-13

Resident Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Zirconium (40)	Zr-89m	8.75E+04	7.92E-06	2.07E+05	7.57E+04	5.54E+04	1.00E-08	1.09E-13
Zirconium (40)	Zr-93	4.53E-07	1.53E+06	1.93E+00	1.34E+03	1.92E+00	2.20E+02	7.66E-07
Zirconium (40)	Zr-95	3.95E+00	1.75E-01	4.55E+00	2.56E+00	1.64E+00	1.00E-08	7.64E-14
Zirconium (40)	Zr-97	3.63E+02	1.91E-03	2.83E+02	2.02E+02	1.18E+02	1.00E-08	6.13E-14

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Actinium (89)	Ac-223	1.73E+05	4.00E-06		2.63E+03	2.63E+03	6.56E-15
Actinium (89)	Ac-224	2.18E+03	3.17E-04	1.23E-02	1.10E+02	1.23E-02	2.45E-18
Actinium (89)	Ac-225	2.53E+01	2.74E-02	4.73E-03	8.93E+02	4.73E-03	8.17E-17
Actinium (89)	Ac-226	2.07E+02	3.35E-03	3.10E-03	4.32E+02	3.10E-03	6.57E-18
Actinium (89)	Ac-227	3.18E-02	2.18E+01	5.48E-04	4.64E+02	5.48E-04	7.59E-15
Actinium (89)	Ac-228	9.87E+02	7.02E-04	9.23E-04	7.95E+01	9.23E-04	4.14E-19
Actinium (89)	Ac-230	1.79E+05	3.87E-06	3.49E-04	8.16E+01	3.49E-04	8.68E-22
Actinium (89)	Ac-231	4.86E+04	1.43E-05	1.38E-04	2.26E+02	1.38E-04	1.27E-21
Actinium (89)	Ac-232	1.84E+05	3.77E-06	4.85E-04	5.29E+01	4.85E-04	1.19E-21
Actinium (89)	Ac-233	1.51E+05	4.60E-06	4.22E-04	1.88E+02	4.22E-04	1.27E-21
Silver (47)	Ag-100m	1.63E+05	4.26E-06	3.22E+01	3.32E+01	1.64E+01	1.95E-17
Silver (47)	Ag-101	3.28E+04	2.11E-05	6.26E+01	8.97E+01	3.69E+01	2.20E-16
Silver (47)	Ag-102	2.82E+04	2.45E-05	1.97E+03	5.58E+01	5.43E+01	3.81E-16
Silver (47)	Ag-102m	4.73E+04	1.46E-05	4.03E+03	5.09E+01	5.02E+01	2.10E-16
Silver (47)	Ag-103	5.54E+03	1.25E-04	8.17E+01	2.35E+02	6.07E+01	2.19E-15
Silver (47)	Ag-104	5.26E+03	1.32E-04	9.55E+02	7.20E+01	6.70E+01	2.57E-15
Silver (47)	Ag-104m	1.09E+04	6.37E-05	1.21E+03	1.06E+02	9.71E+01	1.80E-15
Silver (47)	Ag-105	6.13E+00	1.13E-01	4.70E+01	4.04E+02	4.21E+01	1.40E-12
Silver (47)	Ag-105m	5.04E+04	1.38E-05	4.71E+01	4.05E+02	4.22E+01	1.71E-16
Silver (47)	Ag-106	1.52E+04	4.56E-05	2.40E+03	2.85E+02	2.55E+02	3.45E-15
Silver (47)	Ag-106m	3.05E+01	2.27E-02	3.36E+01	6.92E+01	2.26E+01	1.52E-13
Silver (47)	Ag-108	1.54E+05	4.51E-06		7.03E+03	7.03E+03	9.59E-15
Silver (47)	Ag-108m	1.66E-03	4.18E+02	1.08E+00	1.23E+02	1.07E+00	1.36E-10
Silver (47)	Ag-109m	5.52E+05	1.26E-06		5.65E+04	5.65E+04	2.17E-14
Silver (47)	Ag-110	8.88E+05	7.80E-07		3.63E+03	3.63E+03	8.72E-16
Silver (47)	Ag-110m	1.01E+00	6.84E-01	3.16E+00	6.98E+01	3.02E+00	6.37E-13
Silver (47)	Ag-111	3.40E+01	2.04E-02	2.25E+01	6.43E+03	2.24E+01	1.42E-13
Silver (47)	Ag-111m	3.37E+05	2.05E-06	2.26E+01	5.77E+03	2.26E+01	1.44E-17
Silver (47)	Ag-112	1.94E+03	3.57E-04	2.08E+02	2.63E+02	1.16E+02	1.30E-14
Silver (47)	Ag-113	1.13E+03	6.13E-04	3.52E-01	2.32E+03	3.52E-01	6.82E-17
Silver (47)	Ag-113m	3.18E+05	2.18E-06	3.52E-01	7.43E+02	3.52E-01	2.42E-19
Silver (47)	Ag-114	4.75E+06	1.46E-07		6.12E+02	6.12E+02	2.85E-17
Silver (47)	Ag-115	1.82E+04	3.81E-05	1.11E-01	2.29E+02	1.11E-01	1.36E-18
Silver (47)	Ag-116	1.36E+05	5.10E-06		8.35E+01	8.35E+01	1.38E-16
Silver (47)	Ag-117	2.97E+05	2.33E-06	1.43E+02	6.17E+01	4.31E+01	3.30E-17
Silver (47)	Ag-99	1.76E+05	3.93E-06	3.71E+02	4.57E+01	4.07E+01	4.43E-17
Aluminum (13)	Al-26	9.67E-07	7.17E+05	3.83E-01	6.98E+01	3.81E-01	1.99E-08
Aluminum (13)	Al-28	1.63E+05	4.26E-06		1.01E+02	1.01E+02	3.36E-17
Aluminum (13)	Al-29	5.55E+04	1.25E-05		1.33E+02	1.33E+02	1.35E-16
Americium (95)	Am-237	4.99E+03	1.39E-04	3.76E-04	2.18E+02	3.76E-04	3.47E-20
Americium (95)	Am-238	3.72E+03	1.86E-04	1.78E-04	7.22E+01	1.78E-04	2.21E-20
Americium (95)	Am-239	5.10E+02	1.36E-03	9.77E-05	2.39E+02	9.77E-05	8.88E-20
Americium (95)	Am-240	1.20E+02	5.80E-03	1.98E-04	5.61E+01	1.98E-04	7.72E-19
Americium (95)	Am-241	1.60E-03	4.32E+02	2.04E-04	3.66E+02	2.04E-04	5.94E-14
Americium (95)	Am-242	3.79E+02	1.83E-03	1.72E-04	1.07E+02	1.72E-04	2.14E-19
Americium (95)	Am-242m	4.91E-03	1.41E+02	1.26E-04	1.06E+02	1.26E-04	1.21E-14
Americium (95)	Am-243	9.40E-05	7.37E+03	8.02E-05	2.39E+02	8.02E-05	4.02E-13

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Americium (95)	Am-244	6.01E+02	1.15E-03	1.86E-04	6.03E+01	1.86E-04	1.46E-19
Americium (95)	Am-244m	1.40E+04	4.95E-05	1.86E-04	7.88E+01	1.86E-04	6.28E-21
Americium (95)	Am-245	2.96E+03	2.34E-04	1.38E-04	2.99E+02	1.38E-04	2.21E-20
Americium (95)	Am-246	9.34E+03	7.42E-05	1.22E-04	7.59E+01	1.22E-04	6.21E-21
Americium (95)	Am-246m	1.46E+04	4.76E-05	1.22E-04	6.84E+01	1.22E-04	3.98E-21
Americium (95)	Am-247	1.58E+04	4.38E-05	6.86E-05	1.54E+02	6.86E-05	2.08E-21
Argon (18)	Ar-37	7.22E+00	9.60E-02				
Argon (18)	Ar-39	2.58E-03	2.69E+02		7.77E+04	7.77E+04	2.28E-06
Argon (18)	Ar-41	3.32E+03	2.09E-04		1.45E+02	1.45E+02	3.48E-15
Argon (18)	Ar-42	2.11E-02	3.29E+01	1.07E+02	5.94E+02	9.06E+01	3.51E-10
Argon (18)	Ar-43	6.78E+04	1.02E-05	1.01E+02	7.52E+01	4.31E+01	5.30E-17
Argon (18)	Ar-44	3.07E+04	2.26E-05	1.09E+03	4.18E+01	4.03E+01	1.12E-16
Arsenic (33)	As-68	1.44E+05	4.81E-06	1.30E+00	4.08E+01	1.26E+00	1.15E-18
Arsenic (33)	As-69	2.39E+04	2.90E-05	1.37E+02	9.27E+01	5.53E+01	3.10E-16
Arsenic (33)	As-70	6.92E+03	1.00E-04	5.05E+02	4.47E+01	4.10E+01	8.05E-16
Arsenic (33)	As-71	9.30E+01	7.45E-03	9.62E+01	3.50E+02	7.55E+01	1.12E-13
Arsenic (33)	As-72	2.33E+02	2.97E-03	3.83E+01	1.09E+02	2.83E+01	1.69E-14
Arsenic (33)	As-73	3.15E+00	2.20E-01	2.87E+01	5.80E+04	2.87E+01	1.29E-12
Arsenic (33)	As-74	1.42E+01	4.87E-02	1.57E+01	2.63E+02	1.48E+01	1.49E-13
Arsenic (33)	As-76	2.35E+02	2.95E-03	4.78E+01	4.47E+02	4.32E+01	2.72E-14
Arsenic (33)	As-77	1.56E+02	4.43E-03	9.03E+01	1.84E+04	8.99E+01	8.59E-14
Arsenic (33)	As-78	4.02E+03	1.73E-04	4.04E+02	1.42E+02	1.05E+02	3.97E-15
Arsenic (33)	As-79	4.04E+04	1.71E-05	6.44E+00	3.43E+03	6.43E+00	2.44E-17
Astatine (85)	At-204	3.96E+04	1.75E-05	5.19E+01	2.99E+01	1.90E+01	1.90E-16
Astatine (85)	At-205	1.39E+04	4.98E-05	1.57E+01	4.41E+01	1.16E+01	3.31E-16
Astatine (85)	At-206	1.19E+04	5.82E-05	5.75E-01	2.89E+01	5.64E-01	1.89E-17
Astatine (85)	At-207	3.37E+03	2.05E-04	1.09E+00	4.02E+01	1.07E+00	1.27E-16
Astatine (85)	At-208	3.72E+03	1.86E-04	5.91E-03	6.34E+01	5.91E-03	6.41E-19
Astatine (85)	At-209	1.12E+03	6.18E-04	4.46E-03	8.38E+01	4.46E-03	1.61E-18
Astatine (85)	At-210	7.49E+02	9.25E-04	9.32E-03	6.37E+01	9.31E-03	5.06E-18
Astatine (85)	At-211	8.42E+02	8.24E-04	2.97E-01	2.89E+02	2.96E-01	1.44E-16
Astatine (85)	At-215	2.19E+11	3.17E-12		3.52E+03	3.52E+03	6.72E-21
Astatine (85)	At-216	7.28E+10	9.51E-12	2.64E+00	1.36E+02	2.59E+00	1.49E-23
Astatine (85)	At-217	6.77E+08	1.02E-09	1.23E+00	1.09E+03	1.23E+00	7.63E-22
Astatine (85)	At-218	1.46E+07	4.76E-08	4.02E-03	1.25E+02	4.01E-03	1.17E-22
Astatine (85)	At-219	3.90E+05	1.78E-06	3.31E+00	5.24E+02	3.29E+00	3.58E-18
Astatine (85)	At-220	9.82E+04	7.06E-06	3.58E-01	9.37E+01	3.57E-01	1.55E-18
Gold (79)	Au-186	3.40E+04	2.04E-05	9.67E-03	5.09E+01	9.67E-03	1.03E-19
Gold (79)	Au-187	4.34E+04	1.60E-05	2.51E+02	9.90E+01	7.10E+01	5.94E-16
Gold (79)	Au-190	8.51E+03	8.14E-05	4.32E-03	7.70E+01	4.32E-03	1.87E-19
Gold (79)	Au-191	1.91E+03	3.63E-04	8.79E+01	2.39E+02	6.43E+01	1.25E-14
Gold (79)	Au-192	1.23E+03	5.64E-04	3.79E+02	9.61E+01	7.67E+01	2.33E-14
Gold (79)	Au-193	3.44E+02	2.01E-03	5.13E+01	1.39E+03	4.95E+01	5.39E-14
Gold (79)	Au-193m	5.60E+06	1.24E-07	5.13E+01	6.04E+02	4.73E+01	3.16E-18
Gold (79)	Au-194	1.60E+02	4.34E-03	1.56E+02	1.86E+02	8.49E+01	2.00E-13
Gold (79)	Au-195	1.36E+00	5.10E-01	2.18E+01	3.31E+03	2.17E+01	6.03E-12
Gold (79)	Au-195m	7.17E+05	9.67E-07	2.18E+01	7.96E+02	2.12E+01	1.12E-17

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Gold (79)	Au-196	4.09E+01	1.69E-02	1.16E+02	4.42E+02	9.21E+01	8.56E-13
Gold (79)	Au-196m	6.32E+02	1.10E-03	4.99E+01	2.99E+02	4.27E+01	2.57E-14
Gold (79)	Au-198	9.39E+01	7.38E-03	4.43E+01	4.96E+02	4.07E+01	1.67E-13
Gold (79)	Au-198m	1.11E+02	6.22E-03	1.44E+01	2.23E+02	1.35E+01	4.66E-14
Gold (79)	Au-199	8.06E+01	8.60E-03	4.85E+01	2.25E+03	4.75E+01	2.28E-13
Gold (79)	Au-200	7.53E+03	9.21E-05	1.05E+03	6.72E+02	4.10E+02	2.12E-14
Gold (79)	Au-200m	3.25E+02	2.13E-03	5.44E+01	9.84E+01	3.50E+01	4.19E-14
Gold (79)	Au-201	1.40E+04	4.95E-05	2.15E+03	4.99E+03	1.50E+03	4.18E-14
Gold (79)	Au-202	7.59E+05	9.13E-07		1.00E+03	1.00E+03	5.18E-16
Barium (56)	Ba-124	3.31E+04	2.09E-05	1.61E+03	1.12E+02	1.05E+02	7.64E-16
Barium (56)	Ba-126	3.64E+03	1.90E-04	3.28E+02	1.14E+02	8.45E+01	5.67E-15
Barium (56)	Ba-127	2.87E+04	2.42E-05	7.20E+02	1.43E+02	1.19E+02	1.02E-15
Barium (56)	Ba-128	1.04E+02	6.66E-03	2.64E+01	2.10E+02	2.35E+01	5.60E-14
Barium (56)	Ba-129	2.72E+03	2.55E-04	3.41E+02	3.49E+02	1.72E+02	1.59E-14
Barium (56)	Ba-129m	2.81E+03	2.47E-04	2.92E+02	1.07E+02	7.85E+01	6.99E-15
Barium (56)	Ba-131	2.20E+01	3.15E-02	4.32E+01	4.41E+02	3.94E+01	4.55E-13
Barium (56)	Ba-131m	2.49E+04	2.78E-05	4.29E+01	3.90E+02	3.86E+01	3.93E-16
Barium (56)	Ba-133	6.59E-02	1.05E+01	3.90E+00	5.51E+02	3.87E+00	1.52E-11
Barium (56)	Ba-133m	1.56E+02	4.44E-03	3.72E+00	4.78E+02	3.69E+00	6.10E-15
Barium (56)	Ba-135m	2.12E+02	3.28E-03	1.05E+02	4.13E+03	1.02E+02	1.27E-13
Barium (56)	Ba-137m	1.43E+05	4.86E-06		3.32E+02	3.32E+02	6.18E-16
Barium (56)	Ba-139	4.39E+03	1.58E-04	6.23E+02	3.35E+03	5.25E+02	3.23E-14
Barium (56)	Ba-140	1.98E+01	3.49E-02	5.54E+00	7.50E+01	5.16E+00	7.07E-14
Barium (56)	Ba-141	1.99E+04	3.48E-05	1.00E+01	1.84E+02	9.50E+00	1.30E-16
Barium (56)	Ba-142	3.44E+04	2.02E-05	3.30E+02	5.34E+01	4.59E+01	3.68E-16
Beryllium (4)	Be-10	4.59E-07	1.51E+06	1.19E+00	6.43E+04	1.19E+00	5.04E-08
Beryllium (4)	Be-7	4.75E+00	1.46E-01	6.82E+02	4.04E+03	5.83E+02	1.67E-12
Bismuth (83)	Bi-197	3.92E+04	1.77E-05	8.51E+00	5.25E+01	7.32E+00	7.14E-17
Bismuth (83)	Bi-200	1.00E+04	6.93E-05	6.58E+01	5.02E+01	2.85E+01	1.10E-15
Bismuth (83)	Bi-201	3.37E+03	2.05E-04	9.66E+01	7.14E+01	4.10E+01	4.75E-15
Bismuth (83)	Bi-202	3.53E+03	1.96E-04	8.17E-01	6.13E+01	8.06E-01	8.95E-17
Bismuth (83)	Bi-203	5.16E+02	1.34E-03	7.27E+01	7.08E+01	3.59E+01	2.74E-14
Bismuth (83)	Bi-204	5.41E+02	1.28E-03	1.13E+02	6.19E+01	4.00E+01	2.93E-14
Bismuth (83)	Bi-205	1.65E+01	4.19E-02	2.06E+01	1.12E+02	1.74E+01	4.19E-13
Bismuth (83)	Bi-206	4.05E+01	1.71E-02	2.03E+01	5.91E+01	1.51E+01	1.49E-13
Bismuth (83)	Bi-207	2.11E-02	3.29E+01	1.07E+00	1.27E+02	1.06E+00	2.02E-11
Bismuth (83)	Bi-208	1.88E-06	3.68E+05	1.14E+00	6.62E+01	1.12E+00	2.40E-07
Bismuth (83)	Bi-210	5.05E+01	1.37E-02	9.04E-03	3.46E+04	9.04E-03	7.30E-17
Bismuth (83)	Bi-210m	2.28E-07	3.04E+06	4.08E-03	7.57E+02	4.08E-03	7.29E-09
Bismuth (83)	Bi-211	1.70E+05	4.07E-06		3.53E+03	3.53E+03	8.49E-15
Bismuth (83)	Bi-212	6.02E+03	1.15E-04	2.64E+00	1.36E+02	2.59E+00	1.77E-16
Bismuth (83)	Bi-212n	5.20E+04	1.33E-05		2.04E+03	2.04E+03	1.61E-14
Bismuth (83)	Bi-213	7.99E+03	8.67E-05	1.23E+00	1.09E+03	1.23E+00	6.34E-17
Bismuth (83)	Bi-214	1.83E+04	3.79E-05	4.02E-03	1.25E+02	4.01E-03	9.11E-20
Bismuth (83)	Bi-215	4.79E+04	1.45E-05	3.21E+00	5.09E+02	3.19E+00	2.77E-17
Bismuth (83)	Bi-216	1.68E+05	4.13E-06	3.59E-01	8.44E+01	3.57E-01	8.92E-19
Berkelium (97)	Bk-245	5.12E+01	1.35E-02	1.38E-04	2.37E+02	1.38E-04	1.28E-18

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Berkelium (97)	Bk-246	1.41E+02	4.93E-03	1.22E-04	7.26E+01	1.22E-04	4.13E-19
Berkelium (97)	Bk-247	5.02E-04	1.38E+03	6.05E-05	2.06E+02	6.05E-05	5.77E-14
Berkelium (97)	Bk-248m	2.56E+02	2.71E-03	1.17E-04	6.60E+01	1.17E-04	2.20E-19
Berkelium (97)	Bk-249	7.67E-01	9.04E-01	8.82E-05	2.09E+02	8.82E-05	5.56E-17
Berkelium (97)	Bk-250	1.89E+03	3.67E-04	1.17E-04	7.03E+01	1.17E-04	2.99E-20
Berkelium (97)	Bk-251	6.55E+03	1.06E-04	5.34E-05	1.48E+02	5.34E-05	3.97E-21
Bromine (35)	Br-72	2.78E+05	2.49E-06	8.23E+00	3.99E+01	6.82E+00	3.43E-18
Bromine (35)	Br-73	1.07E+05	6.47E-06	2.52E+01	7.97E+01	1.92E+01	2.53E-17
Bromine (35)	Br-74	1.43E+04	4.83E-05	9.18E+02	3.88E+01	3.73E+01	3.73E-16
Bromine (35)	Br-74m	7.92E+03	8.75E-05	5.41E+02	4.47E+01	4.13E+01	7.48E-16
Bromine (35)	Br-75	3.77E+03	1.84E-04	2.86E+01	1.27E+02	2.33E+01	9.02E-16
Bromine (35)	Br-76	3.75E+02	1.85E-03	8.57E+01	6.67E+01	3.75E+01	1.48E-14
Bromine (35)	Br-76m	1.67E+07	4.15E-08	8.60E+01	6.64E+01	3.75E+01	3.31E-19
Bromine (35)	Br-77	1.06E+02	6.51E-03	4.08E+02	6.38E+02	2.49E+02	3.49E-13
Bromine (35)	Br-77m	8.51E+04	8.14E-06	4.08E+02	6.12E+02	2.45E+02	4.30E-16
Bromine (35)	Br-78	5.64E+04	1.23E-05		1.90E+02	1.90E+02	5.11E-16
Bromine (35)	Br-80	2.06E+04	3.36E-05	2.52E+03	2.24E+03	1.19E+03	8.95E-15
Bromine (35)	Br-80m	1.37E+03	5.05E-04	3.07E+02	2.12E+03	2.68E+02	3.03E-14
Bromine (35)	Br-82	1.72E+02	4.03E-03	5.65E+01	7.32E+01	3.19E+01	2.95E-14
Bromine (35)	Br-82m	5.94E+04	1.17E-05	5.79E+01	7.49E+01	3.27E+01	8.75E-17
Bromine (35)	Br-83	2.53E+03	2.74E-04	7.22E+02	1.75E+04	6.94E+02	4.42E-14
Bromine (35)	Br-84	1.15E+04	6.05E-05	9.44E+02	1.01E+02	9.09E+01	1.29E-15
Bromine (35)	Br-84m	6.07E+04	1.14E-05		6.82E+01	6.82E+01	1.83E-16
Bromine (35)	Br-85	1.26E+05	5.52E-06		8.22E+02	8.22E+02	1.08E-15
Carbon (6)	C-10	1.14E+06	6.11E-07		1.13E+02	1.13E+02	1.93E-18
Carbon (6)	C-11	1.79E+04	3.88E-05	2.00E+03	1.96E+02	1.78E+02	2.13E-16
Carbon (6)	C-14	1.22E-04	5.70E+03	7.09E+00	3.44E+06	7.09E+00	1.59E-09
Calcium (20)	Ca-41	6.79E-06	1.02E+05	1.90E+02		1.90E+02	2.22E-06
Calcium (20)	Ca-45	1.55E+00	4.46E-01	1.09E+01	5.88E+05	1.09E+01	6.14E-13
Calcium (20)	Ca-47	5.58E+01	1.24E-02	1.37E+01	1.63E+02	1.26E+01	2.06E-14
Calcium (20)	Ca-49	4.18E+04	1.66E-05	9.34E+02	5.33E+01	5.04E+01	1.15E-16
Cadmium (48)	Cd-101	2.68E+05	2.59E-06	6.26E+01	4.12E+01	2.49E+01	1.82E-17
Cadmium (48)	Cd-102	6.62E+04	1.05E-05	3.82E+03	4.21E+01	4.17E+01	1.24E-16
Cadmium (48)	Cd-103	4.99E+04	1.39E-05	8.17E+01	6.47E+01	3.61E+01	1.45E-16
Cadmium (48)	Cd-104	6.31E+03	1.10E-04	4.62E+02	9.43E+01	7.83E+01	2.50E-15
Cadmium (48)	Cd-105	6.56E+03	1.06E-04	4.57E+01	1.07E+02	3.20E+01	9.94E-16
Cadmium (48)	Cd-107	9.34E+02	7.42E-04	4.77E+02	1.82E+04	4.65E+02	1.03E-13
Cadmium (48)	Cd-109	5.48E-01	1.26E+00	6.32E+00	3.93E+04	6.32E+00	2.44E-12
Cadmium (48)	Cd-111m	7.51E+03	9.23E-05	1.64E+03	7.44E+02	5.12E+02	1.47E-14
Cadmium (48)	Cd-113	9.00E-17	7.70E+15	3.52E-01	3.59E+05	3.52E-01	8.57E+02
Cadmium (48)	Cd-113m	4.91E-02	1.41E+01	3.72E-01	9.62E+04	3.72E-01	1.66E-12
Cadmium (48)	Cd-115	1.14E+02	6.10E-03	1.12E-01	5.68E+02	1.12E-01	2.20E-16
Cadmium (48)	Cd-115m	5.67E+00	1.22E-01	1.04E-01	4.34E+03	1.04E-01	4.11E-15
Cadmium (48)	Cd-117	2.44E+03	2.84E-04	1.42E+02	1.26E+02	6.68E+01	6.22E-15
Cadmium (48)	Cd-117m	1.81E+03	3.84E-04	1.50E+02	6.90E+01	4.72E+01	5.94E-15
Cadmium (48)	Cd-118	7.24E+03	9.57E-05	4.54E+02	1.54E+03	3.51E+02	1.11E-14
Cadmium (48)	Cd-119	1.35E+05	5.12E-06	1.74E+03	1.01E+02	9.55E+01	1.63E-16

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Cadmium (48)	Cd-119m	1.66E+05	4.19E-06	1.22E+03	6.10E+01	5.81E+01	8.11E-17
Cerium (58)	Ce-130	1.59E+04	4.36E-05	1.02E+03	7.18E+01	6.71E+01	1.06E-15
Cerium (58)	Ce-131	3.57E+04	1.94E-05	4.14E+01	7.24E+01	2.63E+01	1.87E-16
Cerium (58)	Ce-132	1.73E+03	4.01E-04	1.12E+02	8.56E+01	4.84E+01	7.17E-15
Cerium (58)	Ce-133	3.76E+03	1.85E-04	3.87E+00	1.97E+02	3.79E+00	2.61E-16
Cerium (58)	Ce-133m	1.24E+03	5.59E-04	3.84E+00	8.75E+01	3.68E+00	7.66E-16
Cerium (58)	Ce-134	8.00E+01	8.66E-03	2.55E+01	2.70E+02	2.33E+01	7.57E-14
Cerium (58)	Ce-135	3.43E+02	2.02E-03	2.34E+02	2.42E+02	1.19E+02	9.09E-14
Cerium (58)	Ce-137	6.75E+02	1.03E-03	4.62E+00	7.73E+03	4.62E+00	1.82E-15
Cerium (58)	Ce-137m	1.76E+02	3.93E-03	4.38E+00	2.89E+03	4.37E+00	6.59E-15
Cerium (58)	Ce-139	1.84E+00	3.77E-01	2.05E+01	1.49E+03	2.02E+01	2.97E-12
Cerium (58)	Ce-141	7.78E+00	8.91E-02	1.06E+01	2.85E+03	1.05E+01	3.71E-13
Cerium (58)	Ce-143	1.84E+02	3.77E-03	1.18E+01	7.38E+02	1.17E+01	1.76E-14
Cerium (58)	Ce-144	8.88E-01	7.81E-01	2.16E-03	2.75E+03	2.16E-03	6.81E-16
Cerium (58)	Ce-145	1.21E+05	5.73E-06	2.17E+02	2.36E+02	1.13E+02	2.63E-16
Californium (98)	Cf-244	1.88E+04	3.69E-05	4.32E-04	1.24E+02	4.32E-04	1.09E-20
Californium (98)	Cf-246	1.70E+02	4.08E-03	1.73E-04	1.08E+02	1.73E-04	4.85E-19
Californium (98)	Cf-247	1.95E+03	3.55E-04	6.05E-05	1.91E+02	6.05E-05	1.49E-20
Californium (98)	Cf-248	7.57E-01	9.15E-01	1.79E-04	7.95E+01	1.79E-04	1.14E-16
Californium (98)	Cf-249	1.97E-03	3.51E+02	8.82E-05	2.09E+02	8.82E-05	2.16E-14
Californium (98)	Cf-250	5.30E-02	1.31E+01	1.17E-04	1.05E+02	1.17E-04	1.07E-15
Californium (98)	Cf-251	7.70E-04	9.00E+02	5.34E-05	1.57E+02	5.34E-05	3.38E-14
Californium (98)	Cf-252	2.62E-01	2.65E+00	6.53E-05	4.50E+01	6.53E-05	1.22E-16
Californium (98)	Cf-253	1.42E+01	4.88E-02	8.72E-05	2.09E+02	8.72E-05	3.02E-18
Californium (98)	Cf-254	4.18E+00	1.66E-01	7.77E-04	1.08E+01	7.77E-04	9.15E-17
Californium (98)	Cf-255	4.29E+03	1.62E-04	5.31E-05	1.55E+02	5.31E-05	6.13E-21
Chlorine (17)	Cl-34	1.43E+07	4.84E-08		1.87E+02	1.87E+02	8.63E-19
Chlorine (17)	Cl-34m	1.14E+04	6.09E-05	7.93E+02	7.19E+01	6.59E+01	3.82E-16
Chlorine (17)	Cl-36	2.30E-06	3.01E+05	1.09E+00	5.38E+04	1.09E+00	3.32E-08
Chlorine (17)	Cl-38	9.78E+03	7.09E-05	7.65E+02	1.21E+02	1.05E+02	7.90E-16
Chlorine (17)	Cl-39	6.55E+03	1.06E-04	7.53E+02	1.28E+02	1.09E+02	1.26E-15
Chlorine (17)	Cl-40	2.70E+05	2.57E-06		4.27E+01	4.27E+01	1.23E-17
Curium (96)	Cm-238	2.53E+03	2.74E-04	1.81E-04	7.03E+01	1.81E-04	3.31E-20
Curium (96)	Cm-239	2.09E+03	3.31E-04	9.77E-05	1.86E+02	9.77E-05	2.16E-20
Curium (96)	Cm-240	9.37E+00	7.40E-02	4.32E-04	1.24E+02	4.32E-04	2.15E-17
Curium (96)	Cm-241	7.71E+00	8.99E-02	2.05E-04	1.96E+02	2.05E-04	1.24E-17
Curium (96)	Cm-242	1.55E+00	4.46E-01	1.73E-04	1.08E+02	1.73E-04	5.24E-17
Curium (96)	Cm-243	2.38E-02	2.91E+01	9.43E-05	2.68E+02	9.43E-05	1.87E-15
Curium (96)	Cm-244	3.83E-02	1.81E+01	1.86E-04	7.95E+01	1.86E-04	2.30E-15
Curium (96)	Cm-245	8.15E-05	8.50E+03	1.38E-04	3.15E+02	1.38E-04	8.04E-13
Curium (96)	Cm-246	1.46E-04	4.76E+03	1.22E-04	1.05E+02	1.22E-04	3.99E-13
Curium (96)	Cm-247	4.44E-08	1.56E+07	6.86E-05	1.72E+02	6.86E-05	7.40E-10
Curium (96)	Cm-248	1.99E-06	3.48E+05	6.48E-05	4.92E+01	6.48E-05	1.57E-11
Curium (96)	Cm-249	5.68E+03	1.22E-04	8.82E-05	2.04E+02	8.82E-05	7.50E-21
Curium (96)	Cm-250	8.35E-05	8.30E+03	1.68E-05	1.30E+01	1.68E-05	9.73E-14
Curium (96)	Cm-251	2.17E+04	3.20E-05	5.34E-05	1.36E+02	5.34E-05	1.20E-21
Cobalt (27)	Co-54m	2.46E+05	2.82E-06		4.83E+01	4.83E+01	2.06E-17

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Cobalt (27)	Co-55	3.46E+02	2.00E-03	2.82E+01	9.73E+01	2.19E+01	6.73E-15
Cobalt (27)	Co-56	3.28E+00	2.12E-01	5.91E+00	5.07E+01	5.29E+00	1.76E-13
Cobalt (27)	Co-57	9.31E-01	7.44E-01	3.90E+01	1.79E+03	3.81E+01	4.53E-12
Cobalt (27)	Co-58	3.57E+00	1.94E-01	1.86E+01	2.01E+02	1.71E+01	5.38E-13
Cobalt (27)	Co-58m	6.72E+02	1.03E-03	1.85E+01	2.01E+02	1.69E+01	2.84E-15
Cobalt (27)	Co-60	1.31E-01	5.27E+00	1.32E+00	7.51E+01	1.30E+00	1.15E-12
Cobalt (27)	Co-60m	3.48E+04	1.99E-05	1.33E+00	7.51E+01	1.30E+00	4.36E-18
Cobalt (27)	Co-61	3.68E+03	1.88E-04	7.33E+02	2.20E+03	5.50E+02	1.77E-14
Cobalt (27)	Co-62	2.43E+05	2.85E-06		1.13E+02	1.13E+02	5.59E-17
Cobalt (27)	Co-62m	2.62E+04	2.65E-05	1.73E+03	6.87E+01	6.61E+01	3.04E-16
Chromium (24)	Cr-48	2.82E+02	2.46E-03	1.31E+01	5.77E+01	1.07E+01	3.53E-15
Chromium (24)	Cr-49	8.61E+03	8.05E-05	3.59E+02	1.91E+02	1.25E+02	1.38E-15
Chromium (24)	Cr-51	9.13E+00	7.59E-02	1.01E+03	6.38E+03	8.68E+02	9.41E-12
Chromium (24)	Cr-55	1.04E+05	6.65E-06		8.93E+03	8.93E+03	9.15E-15
Chromium (24)	Cr-56	6.13E+04	1.13E-05	2.83E+02	1.05E+02	7.65E+01	1.36E-16
Cesium (55)	Cs-121	1.41E+05	4.92E-06	5.69E+01	5.39E+01	2.77E+01	4.61E-17
Cesium (55)	Cs-121m	1.79E+05	3.87E-06	5.69E+01	5.12E+01	2.69E+01	3.53E-17
Cesium (55)	Cs-123	6.19E+04	1.12E-05	1.03E+01	1.06E+02	9.43E+00	3.63E-17
Cesium (55)	Cs-124	7.10E+05	9.77E-07		1.64E+02	1.64E+02	5.58E-17
Cesium (55)	Cs-125	8.09E+03	8.56E-05	2.64E+00	1.99E+02	2.61E+00	7.81E-17
Cesium (55)	Cs-126	2.22E+05	3.12E-06		1.69E+02	1.69E+02	1.86E-16
Cesium (55)	Cs-127	9.71E+02	7.13E-04	9.24E+02	3.01E+02	2.27E+02	5.76E-14
Cesium (55)	Cs-128	1.00E+05	6.93E-06		2.21E+02	2.21E+02	5.49E-16
Cesium (55)	Cs-129	1.89E+02	3.66E-03	4.66E+02	7.97E+02	2.94E+02	3.89E-13
Cesium (55)	Cs-130	1.25E+04	5.56E-05	2.69E+03	4.01E+02	3.49E+02	7.05E-15
Cesium (55)	Cs-130m	1.05E+05	6.58E-06	2.70E+03	3.68E+02	3.24E+02	7.76E-16
Cesium (55)	Cs-131	2.61E+01	2.65E-02	7.64E+02	3.72E+04	7.49E+02	7.29E-12
Cesium (55)	Cs-132	3.90E+01	1.78E-02	1.19E+02	2.84E+02	8.39E+01	5.51E-13
Cesium (55)	Cs-134	3.36E-01	2.06E+00	1.97E+00	1.26E+02	1.94E+00	1.50E-12
Cesium (55)	Cs-134m	2.09E+03	3.31E-04	1.96E+00	1.25E+02	1.93E+00	2.40E-16
Cesium (55)	Cs-135	3.01E-07	2.30E+06	3.49E+00	4.12E+05	3.49E+00	3.03E-06
Cesium (55)	Cs-135m	6.87E+03	1.01E-04	3.48E+00	1.22E+02	3.39E+00	1.29E-16
Cesium (55)	Cs-136	1.92E+01	3.61E-02	1.44E+01	9.10E+01	1.24E+01	1.70E-13
Cesium (55)	Cs-137	2.30E-02	3.02E+01	1.05E+00	3.50E+02	1.04E+00	1.21E-11
Cesium (55)	Cs-138	1.09E+04	6.36E-05	8.08E+02	7.77E+01	7.09E+01	1.74E-15
Cesium (55)	Cs-138m	1.25E+05	5.54E-06	9.97E+02	7.95E+01	7.36E+01	1.58E-16
Cesium (55)	Cs-139	3.93E+04	1.76E-05	6.23E+02	4.63E+02	2.66E+02	1.82E-15
Cesium (55)	Cs-140	3.43E+05	2.02E-06	5.54E+00	4.29E+01	4.91E+00	3.89E-18
Copper (29)	Cu-57	1.11E+08	6.22E-09	2.46E+01	5.82E+01	1.73E+01	1.72E-20
Copper (29)	Cu-59	2.68E+05	2.58E-06	4.78E+01	1.34E+02	3.52E+01	1.50E-17
Copper (29)	Cu-60	1.54E+04	4.51E-05	1.03E+03	4.75E+01	4.54E+01	3.44E-16
Copper (29)	Cu-61	1.82E+03	3.80E-04	4.84E+02	2.41E+02	1.61E+02	1.05E-14
Copper (29)	Cu-62	3.77E+04	1.84E-05		1.94E+02	1.94E+02	6.20E-16
Copper (29)	Cu-64	4.78E+02	1.45E-03	3.21E+02	1.08E+03	2.47E+02	6.42E-14
Copper (29)	Cu-66	7.11E+04	9.74E-06		1.62E+03	1.62E+03	2.92E-15
Copper (29)	Cu-67	9.82E+01	7.06E-03	6.60E+01	1.82E+03	6.37E+01	8.43E-14
Copper (29)	Cu-69	1.28E+05	5.42E-06	1.35E+03	3.50E+02	2.78E+02	2.92E-16

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Dysprosium (66)	Dy-148	1.10E+05	6.28E-06	6.58E-03	6.27E+01	6.58E-03	1.71E-20
Dysprosium (66)	Dy-149	8.67E+04	7.99E-06	8.17E+00	5.39E+01	7.10E+00	2.37E-17
Dysprosium (66)	Dy-150	5.08E+04	1.36E-05	1.44E-03	6.88E+01	1.44E-03	8.24E-21
Dysprosium (66)	Dy-151	2.03E+04	3.41E-05	3.18E-02	8.08E+01	3.18E-02	4.58E-19
Dysprosium (66)	Dy-152	2.55E+03	2.72E-04	7.13E-04	1.10E+02	7.13E-04	8.25E-20
Dysprosium (66)	Dy-153	9.49E+02	7.31E-04	1.42E+01	1.63E+02	1.31E+01	4.10E-15
Dysprosium (66)	Dy-154	2.31E-07	3.00E+06	1.13E-03		1.13E-03	1.47E-09
Dysprosium (66)	Dy-155	6.13E+02	1.13E-03	9.50E+01	2.49E+02	6.88E+01	3.37E-14
Dysprosium (66)	Dy-157	7.46E+02	9.29E-04	1.26E+01	6.16E+02	1.24E+01	5.05E-15
Dysprosium (66)	Dy-159	1.75E+00	3.96E-01	8.50E+01	8.93E+03	8.42E+01	1.48E-11
Dysprosium (66)	Dy-165	2.60E+03	2.66E-04	5.80E+02	6.43E+03	5.32E+02	6.55E-14
Dysprosium (66)	Dy-165m	2.90E+05	2.39E-06	5.93E+02	4.32E+03	5.22E+02	5.77E-16
Dysprosium (66)	Dy-166	7.44E+01	9.32E-03	1.35E+01	2.92E+03	1.34E+01	5.80E-14
Dysprosium (66)	Dy-167	5.87E+04	1.18E-05	4.78E+02	2.23E+02	1.52E+02	8.40E-16
Dysprosium (66)	Dy-168	4.19E+04	1.66E-05		1.54E+02	1.54E+02	1.20E-15
Erbium (68)	Er-154	9.77E+04	7.10E-06	1.13E-03	1.01E+02	1.13E-03	3.47E-21
Erbium (68)	Er-156	1.87E+04	3.71E-05	4.88E+02	8.97E+01	7.58E+01	1.23E-15
Erbium (68)	Er-159	1.01E+04	6.85E-05	8.05E+01	1.49E+02	5.23E+01	1.60E-15
Erbium (68)	Er-161	1.89E+03	3.66E-04	5.95E+02	1.94E+02	1.47E+02	2.42E-14
Erbium (68)	Er-163	4.86E+03	1.43E-04	1.54E+02	9.10E+03	1.51E+02	9.85E-15
Erbium (68)	Er-165	5.86E+02	1.18E-03	4.19E+03	9.91E+03	2.95E+03	1.61E-12
Erbium (68)	Er-167m	9.63E+06	7.19E-08		2.22E+03	2.22E+03	7.46E-17
Erbium (68)	Er-169	2.69E+01	2.58E-02	3.41E+01	3.03E+05	3.41E+01	4.15E-13
Erbium (68)	Er-171	8.08E+02	8.58E-04	2.63E+01	5.54E+02	2.51E+01	1.03E-14
Erbium (68)	Er-172	1.23E+02	5.63E-03	1.55E+01	1.97E+02	1.44E+01	3.90E-14
Erbium (68)	Er-173	2.54E+05	2.73E-06	1.94E+02	1.64E+02	8.88E+01	1.17E-16
Einsteinium (99)	Es-249	3.56E+03	1.94E-04	8.84E-05	1.48E+02	8.84E-05	1.20E-20
Einsteinium (99)	Es-250	7.06E+02	9.82E-04	1.18E-04	6.54E+01	1.18E-04	8.14E-20
Einsteinium (99)	Es-250m	2.73E+03	2.53E-04	1.17E-04	8.10E+01	1.17E-04	2.07E-20
Einsteinium (99)	Es-251	1.84E+02	3.77E-03	5.34E-05	1.48E+02	5.34E-05	1.41E-19
Einsteinium (99)	Es-253	1.24E+01	5.61E-02	8.76E-05	2.09E+02	8.76E-05	3.48E-18
Einsteinium (99)	Es-254	9.17E-01	7.55E-01	1.14E-04	7.02E+01	1.14E-04	6.12E-17
Einsteinium (99)	Es-254m	1.54E+02	4.49E-03	1.18E-04	8.41E+01	1.18E-04	3.78E-19
Einsteinium (99)	Es-255	6.36E+00	1.09E-01	5.31E-05	1.56E+02	5.31E-05	4.13E-18
Einsteinium (99)	Es-256	1.43E+04	4.83E-05	8.02E-04	1.43E+01	8.02E-04	2.78E-20
Europium (63)	Eu-142	9.34E+06	7.42E-08	4.92E+02	8.80E+01	7.47E+01	2.20E-18
Europium (63)	Eu-142m	2.98E+05	2.33E-06	4.92E+02	4.43E+01	4.06E+01	3.76E-17
Europium (63)	Eu-143	1.41E+05	4.93E-06	1.33E+01	9.95E+01	1.18E+01	2.32E-17
Europium (63)	Eu-144	2.14E+06	3.23E-07		1.72E+02	1.72E+02	2.25E-17
Europium (63)	Eu-145	4.27E+01	1.62E-02	3.48E+00	1.46E+02	3.40E+00	2.24E-14
Europium (63)	Eu-146	5.49E+01	1.26E-02	1.63E-03	8.05E+01	1.63E-03	8.44E-18
Europium (63)	Eu-147	1.05E+01	6.60E-02	1.79E-03	4.40E+02	1.79E-03	4.86E-17
Europium (63)	Eu-148	4.64E+00	1.49E-01	1.06E-03	8.84E+01	1.06E-03	6.57E-17
Europium (63)	Eu-149	2.72E+00	2.55E-01	8.94E+01	4.40E+03	8.76E+01	9.32E-12
Europium (63)	Eu-150	1.88E-02	3.69E+01	3.26E-01	1.29E+02	3.25E-01	5.03E-12
Europium (63)	Eu-150m	4.74E+02	1.46E-03	1.51E-03	3.83E+03	1.51E-03	9.29E-19
Europium (63)	Eu-152	5.12E-02	1.35E+01	2.54E-03	1.66E+02	2.54E-03	1.46E-14

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Europium (63)	Eu-152m	6.52E+02	1.06E-03	9.90E-04	6.52E+02	9.90E-04	4.48E-19
Europium (63)	Eu-152n	3.79E+03	1.83E-04	2.54E-03	1.58E+02	2.54E-03	1.97E-19
Europium (63)	Eu-154	8.06E-02	8.59E+00	3.79E-01	1.55E+02	3.78E-01	1.40E-12
Europium (63)	Eu-154m	7.92E+03	8.75E-05	3.79E-01	1.49E+02	3.78E-01	1.43E-17
Europium (63)	Eu-155	1.46E-01	4.76E+00	6.70E+00	4.12E+03	6.69E+00	1.38E-11
Europium (63)	Eu-156	1.67E+01	4.16E-02	9.89E+00	1.50E+02	9.28E+00	1.69E-13
Europium (63)	Eu-157	4.00E+02	1.73E-03	1.15E+02	7.26E+02	9.91E+01	7.55E-14
Europium (63)	Eu-158	7.94E+03	8.73E-05	7.47E+02	1.45E+02	1.22E+02	4.70E-15
Europium (63)	Eu-159	2.01E+04	3.44E-05	1.15E+02	5.74E+02	9.58E+01	1.47E-15
Fluorine (9)	F-17	3.39E+05	2.04E-06		1.94E+02	1.94E+02	1.89E-17
Fluorine (9)	F-18	3.32E+03	2.09E-04	6.57E+02	2.03E+02	1.55E+02	1.63E-15
Iron (26)	Fe-52	7.34E+02	9.45E-04	5.23E+01	6.01E+01	2.80E+01	3.84E-15
Iron (26)	Fe-53	4.28E+04	1.62E-05	1.20E+02	1.67E+02	6.97E+01	1.67E-16
Iron (26)	Fe-53m	1.44E+05	4.81E-06	1.20E+02	4.52E+01	3.28E+01	2.34E-17
Iron (26)	Fe-55	2.53E-01	2.74E+00	4.83E+01	1.34E+12	4.83E+01	2.04E-11
Iron (26)	Fe-59	5.68E+00	1.22E-01	9.80E+00	1.59E+02	9.23E+00	1.86E-13
Iron (26)	Fe-60	4.62E-07	1.50E+06	1.32E-01	7.51E+01	1.32E-01	3.33E-08
Iron (26)	Fe-61	6.09E+04	1.14E-05	7.33E+02	1.26E+02	1.08E+02	2.09E-16
Iron (26)	Fe-62	3.21E+05	2.16E-06		8.72E+01	8.72E+01	3.26E-17
Fermium (100)	Fm-251	1.15E+03	6.05E-04	5.36E-05	1.34E+02	5.36E-05	2.28E-20
Fermium (100)	Fm-252	2.39E+02	2.90E-03	1.79E-04	7.95E+01	1.79E-04	3.66E-19
Fermium (100)	Fm-253	8.43E+01	8.22E-03	8.75E-05	1.98E+02	8.75E-05	5.10E-19
Fermium (100)	Fm-254	1.87E+03	3.70E-04	1.17E-04	1.04E+02	1.17E-04	3.07E-20
Fermium (100)	Fm-255	3.02E+02	2.29E-03	5.34E-05	1.57E+02	5.34E-05	8.73E-20
Fermium (100)	Fm-256	2.31E+03	3.00E-04	8.03E-04	1.43E+01	8.02E-04	1.72E-19
Fermium (100)	Fm-257	2.52E+00	2.75E-01	8.59E-05	1.84E+02	8.59E-05	1.70E-17
Francium (87)	Fr-212	1.82E+04	3.81E-05	5.89E-03	7.89E+01	5.89E-03	1.33E-19
Francium (87)	Fr-219	1.09E+09	6.34E-10		3.31E+03	3.31E+03	1.29E-18
Francium (87)	Fr-220	7.98E+05	8.69E-07	2.65E+00	1.36E+02	2.60E+00	1.39E-18
Francium (87)	Fr-221	7.43E+04	9.32E-06	1.23E+00	9.47E+02	1.23E+00	7.07E-18
Francium (87)	Fr-222	2.57E+04	2.70E-05	4.01E-03	1.00E+03	4.01E-03	6.73E-20
Francium (87)	Fr-223	1.66E+04	4.19E-05	4.63E-03	5.51E+02	4.63E-03	1.21E-19
Francium (87)	Fr-224	1.09E+05	6.34E-06	1.16E-02	9.08E+01	1.16E-02	4.61E-20
Francium (87)	Fr-227	1.47E+05	4.70E-06	5.48E-04	1.96E+02	5.48E-04	1.64E-21
Gallium (31)	Ga-64	1.39E+05	5.00E-06		5.45E+01	5.45E+01	4.88E-17
Gallium (31)	Ga-65	2.40E+04	2.89E-05	1.69E+01	1.12E+02	1.47E+01	7.73E-17
Gallium (31)	Ga-66	6.40E+02	1.08E-03	7.65E+01	7.20E+01	3.71E+01	7.43E-15
Gallium (31)	Ga-67	7.76E+01	8.93E-03	1.45E+02	1.36E+03	1.31E+02	2.20E-13
Gallium (31)	Ga-68	5.38E+03	1.29E-04	7.11E+02	2.08E+02	1.61E+02	3.95E-15
Gallium (31)	Ga-70	1.72E+04	4.02E-05	2.24E+03	1.08E+04	1.85E+03	1.46E-14
Gallium (31)	Ga-72	4.31E+02	1.61E-03	6.49E+01	6.82E+01	3.33E+01	1.08E-14
Gallium (31)	Ga-73	1.25E+03	5.55E-04	2.38E+02	5.73E+02	1.68E+02	1.91E-14
Gallium (31)	Ga-74	4.49E+04	1.54E-05		5.76E+01	5.76E+01	1.84E-16
Gadolinium (64)	Gd-142	3.11E+05	2.23E-06	4.92E+02	5.98E+01	5.33E+01	4.72E-17
Gadolinium (64)	Gd-143m	1.99E+05	3.49E-06	1.33E+01	4.77E+01	1.04E+01	1.46E-17
Gadolinium (64)	Gd-144	8.15E+04	8.50E-06		9.47E+01	9.47E+01	3.25E-16
Gadolinium (64)	Gd-145	1.58E+04	4.38E-05	3.48E+00	4.98E+01	3.25E+00	5.77E-17

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Gadolinium (64)	Gd-145m	2.57E+05	2.70E-06	3.48E+00	4.39E+01	3.22E+00	3.53E-18
Gadolinium (64)	Gd-146	5.24E+00	1.32E-01	1.63E-03	7.46E+01	1.63E-03	8.83E-17
Gadolinium (64)	Gd-147	1.59E+02	4.35E-03	1.79E-03	1.07E+02	1.79E-03	3.20E-18
Gadolinium (64)	Gd-148	9.29E-03	7.46E+01	6.58E-03		6.58E-03	2.03E-13
Gadolinium (64)	Gd-149	2.73E+01	2.54E-02	2.84E+01	3.66E+02	2.63E+01	2.79E-13
Gadolinium (64)	Gd-150	3.87E-07	1.79E+06	1.35E-03		1.35E-03	1.01E-09
Gadolinium (64)	Gd-151	2.04E+00	3.40E-01	3.33E+01	4.15E+03	3.30E+01	4.74E-12
Gadolinium (64)	Gd-152	6.42E-15	1.08E+14	7.13E-04		7.13E-04	3.28E-02
Gadolinium (64)	Gd-153	1.05E+00	6.59E-01	1.65E+01	2.87E+03	1.64E+01	4.62E-12
Gadolinium (64)	Gd-159	3.29E+02	2.11E-03	1.24E+02	3.80E+03	1.20E+02	1.13E-13
Gadolinium (64)	Gd-162	4.34E+04	1.60E-05		1.29E+02	1.29E+02	9.38E-16
Germanium (32)	Ge-66	2.69E+03	2.58E-04	6.42E+01	5.81E+01	3.05E+01	1.45E-15
Germanium (32)	Ge-67	1.93E+04	3.60E-05	1.32E+02	1.24E+02	6.39E+01	4.31E-16
Germanium (32)	Ge-68	9.34E-01	7.42E-01	1.30E+00	2.08E+02	1.29E+00	1.83E-13
Germanium (32)	Ge-69	1.55E+02	4.46E-03	1.49E+02	2.04E+02	8.61E+01	7.41E-14
Germanium (32)	Ge-71	2.21E+01	3.13E-02	3.03E+03	9.92E+07	3.03E+03	1.89E-11
Germanium (32)	Ge-75	4.40E+03	1.57E-04	9.74E+02	4.88E+03	8.12E+02	2.69E-14
Germanium (32)	Ge-77	5.37E+02	1.29E-03	4.68E+01	1.79E+02	3.71E+01	1.03E-14
Germanium (32)	Ge-78	4.14E+03	1.67E-04	1.96E+02	1.19E+02	7.40E+01	2.71E-15
Hydrogen (1)	H-3	5.63E-02	1.23E+01	1.51E+02		1.51E+02	1.56E-11
Hafnium (72)	Hf-167	1.78E+05	3.90E-06	2.86E+01	7.34E+01	2.06E+01	3.76E-17
Hafnium (72)	Hf-169	1.12E+05	6.16E-06	1.02E+01	8.90E+01	9.15E+00	2.67E-17
Hafnium (72)	Hf-170	3.79E+02	1.83E-03	3.97E+01	6.23E+01	2.43E+01	2.11E-14
Hafnium (72)	Hf-172	3.71E-01	1.87E+00	1.50E+00	9.64E+01	1.48E+00	1.33E-12
Hafnium (72)	Hf-173	2.57E+02	2.69E-03	1.06E+01	3.94E+02	1.03E+01	1.34E-14
Hafnium (72)	Hf-174	3.47E-16	2.00E+15	8.23E-03		8.23E-03	8.02E+00
Hafnium (72)	Hf-175	3.61E+00	1.92E-01	2.81E+01	6.08E+02	2.69E+01	2.53E-12
Hafnium (72)	Hf-177m	7.09E+03	9.78E-05	3.93E+02	9.08E+01	7.37E+01	3.57E-15
Hafnium (72)	Hf-178m	2.24E-02	3.10E+01	1.90E-01	9.13E+01	1.89E-01	2.92E-12
Hafnium (72)	Hf-179m	1.01E+01	6.86E-02	8.90E+00	2.28E+02	8.57E+00	2.95E-13
Hafnium (72)	Hf-180m	1.10E+03	6.28E-04	2.61E+02	2.09E+02	1.16E+02	3.68E-14
Hafnium (72)	Hf-181	5.97E+00	1.16E-01	6.69E+00	3.85E+02	6.58E+00	3.87E-13
Hafnium (72)	Hf-182	7.70E-08	9.00E+06	1.38E-01	1.27E+02	1.38E-01	6.34E-07
Hafnium (72)	Hf-182m	5.92E+03	1.17E-04	3.14E-01	8.51E+01	3.12E-01	1.86E-17
Hafnium (72)	Hf-183	5.69E+03	1.22E-04	1.70E+01	1.90E+02	1.56E+01	9.72E-16
Hafnium (72)	Hf-184	1.47E+03	4.70E-04	4.75E+01	1.11E+02	3.33E+01	8.06E-15
Mercury (80)	Hg-190	1.82E+04	3.81E-05	4.32E-03	7.22E+01	4.32E-03	8.75E-20
Mercury (80)	Hg-191m	7.17E+03	9.67E-05	5.17E+01	8.54E+01	3.22E+01	1.66E-15
Mercury (80)	Hg-192	1.25E+03	5.54E-04	3.65E+01	8.60E+01	2.56E+01	7.63E-15
Mercury (80)	Hg-193	1.60E+03	4.34E-04	2.43E+01	1.99E+02	2.17E+01	5.08E-15
Mercury (80)	Hg-193m	5.14E+02	1.35E-03	1.05E+01	1.41E+02	9.75E+00	7.09E-15
Mercury (80)	Hg-194	1.58E-03	4.40E+02	1.75E+00	1.86E+02	1.74E+00	4.15E-10
Mercury (80)	Hg-195	5.77E+02	1.20E-03	1.20E+01	8.17E+02	1.18E+01	7.77E-15
Mercury (80)	Hg-195m	1.46E+02	4.75E-03	3.73E+00	5.75E+02	3.71E+00	9.62E-15
Mercury (80)	Hg-197	9.35E+01	7.41E-03	8.62E+00	3.74E+03	8.60E+00	3.52E-14
Mercury (80)	Hg-197m	2.55E+02	2.72E-03	3.96E+00	1.51E+03	3.95E+00	5.93E-15
Mercury (80)	Hg-199m	8.54E+03	8.12E-05	2.28E+02	1.19E+03	1.92E+02	8.66E-15

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Mercury (80)	Hg-203	5.43E+00	1.28E-01	5.66E+00	8.59E+02	5.62E+00	4.08E-13
Mercury (80)	Hg-205	7.00E+04	9.89E-06		1.44E+04	1.44E+04	8.19E-14
Mercury (80)	Hg-206	4.47E+04	1.55E-05		1.50E+03	1.50E+03	1.34E-14
Mercury (80)	Hg-207	1.26E+05	5.52E-06		6.95E+01	6.95E+01	2.22E-16
Holmium (67)	Ho-150	2.85E+05	2.44E-06	1.44E-03	4.11E+01	1.44E-03	1.47E-21
Holmium (67)	Ho-153	1.81E+05	3.82E-06	1.42E+01	8.85E+01	1.23E+01	2.01E-17
Holmium (67)	Ho-153m	3.92E+04	1.77E-05	1.42E+01	8.75E+01	1.22E+01	9.26E-17
Holmium (67)	Ho-154	3.10E+04	2.24E-05	1.13E-03	1.03E+02	1.13E-03	1.09E-20
Holmium (67)	Ho-154m	1.17E+05	5.90E-06	1.13E-03	8.19E+01	1.13E-03	2.88E-21
Holmium (67)	Ho-155	7.59E+03	9.13E-05	8.95E+01	1.42E+02	5.48E+01	2.17E-15
Holmium (67)	Ho-156	6.50E+03	1.07E-04	6.65E+02	9.13E+01	8.03E+01	3.74E-15
Holmium (67)	Ho-157	2.89E+04	2.40E-05	1.26E+01	2.28E+02	1.19E+01	1.26E-16
Holmium (67)	Ho-159	1.10E+04	6.29E-05	8.37E+01	5.51E+02	7.27E+01	2.04E-15
Holmium (67)	Ho-160	1.42E+04	4.87E-05	2.68E+03	1.17E+02	1.12E+02	2.44E-15
Holmium (67)	Ho-161	2.45E+03	2.83E-04	4.86E+03	6.72E+03	2.82E+03	3.60E-13
Holmium (67)	Ho-162	2.43E+04	2.85E-05	1.27E+04	1.37E+03	1.23E+03	1.60E-14
Holmium (67)	Ho-162m	5.44E+03	1.27E-04	1.60E+03	3.10E+02	2.59E+02	1.50E-14
Holmium (67)	Ho-163	1.52E-04	4.57E+03	1.55E+02		1.55E+02	3.23E-07
Holmium (67)	Ho-164	1.26E+04	5.52E-05	4.28E+03	1.11E+04	3.09E+03	7.82E-14
Holmium (67)	Ho-164m	9.59E+03	7.23E-05	1.84E+03	4.79E+03	1.33E+03	4.42E-14
Holmium (67)	Ho-166	2.27E+02	3.06E-03	5.18E+01	5.10E+03	5.13E+01	7.29E-14
Holmium (67)	Ho-166m	5.78E-04	1.20E+03	1.47E-01	1.23E+02	1.47E-01	8.21E-11
Holmium (67)	Ho-167	1.96E+03	3.54E-04	4.78E+02	5.58E+02	2.58E+02	4.26E-14
Holmium (67)	Ho-168	1.22E+05	5.69E-06		2.20E+02	2.20E+02	5.89E-16
Holmium (67)	Ho-168m	1.66E+05	4.19E-06		2.19E+02	2.19E+02	4.32E-16
Holmium (67)	Ho-170	1.32E+05	5.25E-06		1.14E+02	1.14E+02	2.85E-16
Iodine (53)	I-118	2.66E+04	2.61E-05	1.38E+01	6.85E+01	1.15E+01	9.91E-17
Iodine (53)	I-118m	4.29E+04	1.62E-05	1.48E+01	4.30E+01	1.10E+01	5.88E-17
Iodine (53)	I-119	1.91E+04	3.63E-05	1.80E+02	1.18E+02	7.15E+01	8.66E-16
Iodine (53)	I-120	4.46E+03	1.55E-04	1.35E+02	6.98E+01	4.60E+01	2.40E-15
Iodine (53)	I-120m	6.87E+03	1.01E-04	2.69E+02	5.48E+01	4.55E+01	1.54E-15
Iodine (53)	I-121	2.86E+03	2.42E-04	5.69E+01	2.13E+02	4.49E+01	3.68E-15
Iodine (53)	I-122	1.00E+05	6.91E-06		2.03E+02	2.03E+02	4.80E-16
Iodine (53)	I-123	4.57E+02	1.51E-03	1.03E+01	1.36E+03	1.03E+01	5.36E-15
Iodine (53)	I-124	6.06E+01	1.14E-02	2.78E+00	1.75E+02	2.74E+00	1.09E-14
Iodine (53)	I-125	4.26E+00	1.63E-01	2.64E+00	2.36E+04	2.64E+00	1.51E-13
Iodine (53)	I-126	1.96E+01	3.54E-02	1.27E+00	4.65E+02	1.26E+00	1.58E-14
Iodine (53)	I-128	1.46E+04	4.75E-05	6.01E+02	2.52E+03	4.85E+02	8.27E-15
Iodine (53)	I-129	4.41E-08	1.57E+07	4.04E-01	3.12E+04	4.04E-01	2.29E-06
Iodine (53)	I-130	4.91E+02	1.41E-03	1.85E+01	9.23E+01	1.54E+01	7.91E-15
Iodine (53)	I-130m	4.12E+04	1.68E-05	2.20E+01	1.04E+02	1.82E+01	1.11E-16
Iodine (53)	I-131	3.15E+01	2.20E-02	1.67E+00	5.25E+02	1.67E+00	1.34E-14
Iodine (53)	I-132	2.65E+03	2.62E-04	1.13E+02	8.59E+01	4.87E+01	4.72E-15
Iodine (53)	I-132m	4.38E+03	1.58E-04	6.94E+01	8.55E+01	3.83E+01	2.24E-15
Iodine (53)	I-133	2.92E+02	2.37E-03	7.96E+00	3.06E+02	7.76E+00	6.86E-15
Iodine (53)	I-134	6.94E+03	9.99E-05	2.69E+02	7.38E+01	5.79E+01	2.17E-15
Iodine (53)	I-134m	1.01E+05	6.85E-06	2.76E+02	6.86E+01	5.50E+01	1.41E-16

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Iodine (53)	I-135	9.24E+02	7.50E-04	3.19E+00	9.94E+01	3.09E+00	8.77E-16
Indium (49)	In-103	3.64E+05	1.90E-06	8.17E+01	3.33E+01	2.37E+01	1.30E-17
Indium (49)	In-105	7.18E+04	9.65E-06	4.57E+01	5.16E+01	2.42E+01	6.87E-17
Indium (49)	In-106	5.87E+04	1.18E-05		5.48E+01	5.48E+01	1.92E-16
Indium (49)	In-106m	7.00E+04	9.89E-06		6.62E+01	6.62E+01	1.94E-16
Indium (49)	In-107	1.12E+04	6.16E-05	3.58E+02	1.24E+02	9.18E+01	1.70E-15
Indium (49)	In-108	6.28E+03	1.10E-04	7.64E+02	4.93E+01	4.64E+01	1.55E-15
Indium (49)	In-108m	9.20E+03	7.53E-05	9.63E+02	6.62E+01	6.19E+01	1.41E-15
Indium (49)	In-109	1.45E+03	4.79E-04	6.28E+00	3.10E+02	6.16E+00	9.01E-16
Indium (49)	In-109m	2.72E+05	2.55E-06	6.28E+00	1.59E+02	6.04E+00	4.70E-18
Indium (49)	In-110	1.24E+03	5.59E-04	2.66E+02	6.33E+01	5.12E+01	8.81E-15
Indium (49)	In-110m	5.27E+03	1.31E-04	7.26E+02	1.23E+02	1.05E+02	4.26E-15
Indium (49)	In-111	9.02E+01	7.68E-03	1.52E+02	5.28E+02	1.18E+02	2.82E-13
Indium (49)	In-111m	4.73E+04	1.46E-05	1.52E+02	2.36E+02	9.24E+01	4.21E-16
Indium (49)	In-112	2.43E+04	2.85E-05	4.63E+03	7.51E+02	6.46E+02	5.77E-15
Indium (49)	In-112m	1.77E+04	3.91E-05	1.23E+03	6.93E+02	4.44E+02	5.44E-15
Indium (49)	In-113m	3.66E+03	1.89E-04	1.75E+03	7.90E+02	5.44E+02	3.26E-14
Indium (49)	In-114	3.04E+05	2.28E-06		1.23E+04	1.23E+04	8.94E-15
Indium (49)	In-114m	5.11E+00	1.36E-01	2.91E+00	2.25E+03	2.90E+00	1.26E-13
Indium (49)	In-115	1.57E-15	4.41E+14	1.07E-01	1.35E+05	1.07E-01	1.51E+01
Indium (49)	In-115m	1.35E+03	5.12E-04	1.12E-01	1.28E+03	1.12E-01	1.85E-17
Indium (49)	In-116m	6.69E+03	1.04E-04	7.72E+02	7.57E+01	6.89E+01	2.32E-15
Indium (49)	In-117	8.43E+03	8.22E-05	9.43E+02	2.90E+02	2.22E+02	5.97E-15
Indium (49)	In-117m	3.13E+03	2.21E-04	3.92E+02	4.80E+02	2.16E+02	1.56E-14
Indium (49)	In-118	4.37E+06	1.59E-07		1.56E+03	1.56E+03	8.18E-17
Indium (49)	In-118m	8.35E+04	8.30E-06		6.82E+01	6.82E+01	1.87E-16
Indium (49)	In-119	1.52E+05	4.57E-06	1.21E+03	2.52E+02	2.09E+02	3.18E-16
Indium (49)	In-119m	2.02E+04	3.42E-05	1.82E+03	1.52E+03	8.29E+02	9.47E-15
Indium (49)	In-121	9.46E+05	7.32E-07	2.10E+01	2.05E+02	1.90E+01	4.72E-18
Indium (49)	In-121m	9.39E+04	7.38E-06	1.43E+02	1.99E+03	1.33E+02	3.33E-16
Iridium (77)	Ir-180	2.43E+05	2.85E-06	2.46E+03	6.79E+01	6.61E+01	9.51E-17
Iridium (77)	Ir-182	2.43E+04	2.85E-05	5.77E+01	6.46E+01	3.05E+01	4.43E-16
Iridium (77)	Ir-183	6.28E+03	1.10E-04	1.04E+01	8.61E+01	9.27E+00	5.24E-16
Iridium (77)	Ir-184	1.96E+03	3.53E-04	2.93E+02	9.91E+01	7.41E+01	1.35E-14
Iridium (77)	Ir-185	4.22E+02	1.64E-03	2.17E+01	1.27E+02	1.86E+01	1.58E-14
Iridium (77)	Ir-186	3.65E+02	1.90E-03	9.67E-03	1.17E+02	9.67E-03	9.57E-18
Iridium (77)	Ir-186m	3.16E+03	2.19E-04	9.67E-03	1.16E+02	9.67E-03	1.10E-18
Iridium (77)	Ir-187	5.78E+02	1.20E-03	4.79E+02	6.38E+02	2.74E+02	1.72E-13
Iridium (77)	Ir-188	1.46E+02	4.74E-03	7.64E+01	8.84E+01	4.10E+01	1.02E-13
Iridium (77)	Ir-189	1.92E+01	3.62E-02	6.96E+01	3.35E+03	6.82E+01	1.31E-12
Iridium (77)	Ir-190	2.15E+01	3.23E-02	2.80E+01	1.37E+02	2.32E+01	3.99E-13
Iridium (77)	Ir-190m	5.42E+03	1.28E-04	2.78E+01	1.37E+02	2.31E+01	1.57E-15
Iridium (77)	Ir-190n	1.97E+03	3.52E-04	1.87E+02	1.24E+02	7.47E+01	1.40E-14
Iridium (77)	Ir-191m	4.42E+06	1.57E-07		3.36E+03	3.36E+03	2.81E-16
Iridium (77)	Ir-192	3.43E+00	2.02E-01	5.98E+00	2.47E+02	5.84E+00	6.35E-13
Iridium (77)	Ir-192m	2.51E+05	2.76E-06	5.98E+00	2.47E+02	5.84E+00	8.66E-18
Iridium (77)	Ir-192n	2.88E-03	2.41E+02	6.37E-01	2.47E+02	6.35E-01	8.23E-11

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Iridium (77)	Ir-193m	2.40E+01	2.88E-02	3.23E+01	8.59E+05	3.23E+01	5.04E-13
Iridium (77)	Ir-194	3.15E+02	2.20E-03	6.46E+01	1.87E+03	6.25E+01	7.47E-14
Iridium (77)	Ir-194m	1.48E+00	4.68E-01	3.28E+00	8.59E+01	3.16E+00	8.04E-13
Iridium (77)	Ir-195	2.43E+03	2.85E-04	5.24E+02	4.06E+03	4.64E+02	7.24E-14
Iridium (77)	Ir-195m	1.60E+03	4.34E-04	6.10E+01	5.11E+02	5.45E+01	1.29E-14
Iridium (77)	Ir-196	4.20E+05	1.65E-06		7.70E+02	7.70E+02	6.97E-16
Iridium (77)	Ir-196m	4.34E+03	1.60E-04	4.04E+02	8.12E+01	6.76E+01	5.93E-15
Potassium (19)	K-38	4.77E+04	1.45E-05		5.73E+01	5.73E+01	8.85E-17
Potassium (19)	K-40	5.54E-10	1.25E+09	4.92E-01	1.12E+03	4.92E-01	6.89E-05
Potassium (19)	K-42	4.91E+02	1.41E-03	1.07E+02	5.99E+02	9.07E+01	1.51E-14
Potassium (19)	K-43	2.72E+02	2.55E-03	1.01E+02	2.06E+02	6.78E+01	2.08E-14
Potassium (19)	K-44	1.65E+04	4.21E-05	1.09E+03	7.51E+01	7.02E+01	3.64E-16
Potassium (19)	K-45	2.11E+04	3.29E-05	1.09E+01	9.87E+01	9.79E+00	4.06E-17
Potassium (19)	K-46	2.08E+05	3.33E-06		6.08E+01	6.08E+01	2.61E-17
Krypton (36)	Kr-74	3.17E+04	2.19E-05	9.18E+02	3.22E+01	3.11E+01	1.41E-16
Krypton (36)	Kr-75	8.49E+04	8.16E-06	2.86E+01	6.94E+01	2.02E+01	3.47E-17
Krypton (36)	Kr-76	4.10E+02	1.69E-03	8.57E+01	5.86E+01	3.48E+01	1.25E-14
Krypton (36)	Kr-77	4.90E+03	1.42E-04	4.08E+02	1.48E+02	1.09E+02	3.31E-15
Krypton (36)	Kr-79	1.73E+02	4.00E-03		8.05E+02	8.05E+02	7.12E-13
Krypton (36)	Kr-81	3.03E-06	2.29E+05		2.34E+05	2.34E+05	1.21E-02
Krypton (36)	Kr-81m	1.67E+06	4.15E-07		1.59E+03	1.59E+03	1.50E-16
Krypton (36)	Kr-83m	3.32E+03	2.09E-04		8.12E+06	8.12E+06	3.94E-10
Krypton (36)	Kr-85	6.44E-02	1.08E+01		3.71E+04	3.71E+04	9.49E-08
Krypton (36)	Kr-85m	1.36E+03	5.11E-04		1.29E+03	1.29E+03	1.58E-13
Krypton (36)	Kr-87	4.77E+03	1.45E-04	2.60E+00	2.25E+02	2.57E+00	9.08E-17
Krypton (36)	Kr-88	2.14E+03	3.24E-04	1.31E+03	6.83E+01	6.49E+01	5.18E-15
Krypton (36)	Kr-89	1.16E+05	5.99E-06	4.93E+00	4.36E+01	4.43E+00	6.61E-18
Lanthanum (57)	La-128	7.03E+04	9.86E-06	2.64E+01	5.18E+01	1.75E+01	6.18E-17
Lanthanum (57)	La-129	3.14E+04	2.21E-05	3.02E+02	1.26E+02	8.87E+01	7.07E-16
Lanthanum (57)	La-130	4.19E+04	1.66E-05		8.67E+01	8.67E+01	5.22E-16
Lanthanum (57)	La-131	6.17E+03	1.12E-04	4.21E+01	1.82E+02	3.42E+01	1.41E-15
Lanthanum (57)	La-132	1.26E+03	5.48E-04	1.99E+02	9.56E+01	6.46E+01	1.31E-14
Lanthanum (57)	La-132m	1.50E+04	4.62E-05	2.28E+02	8.89E+01	6.39E+01	1.09E-15
Lanthanum (57)	La-133	1.55E+03	4.47E-04	3.89E+00	3.95E+02	3.85E+00	6.40E-16
Lanthanum (57)	La-134	5.65E+04	1.23E-05		2.74E+02	2.74E+02	1.26E-15
Lanthanum (57)	La-135	3.11E+02	2.23E-03	2.37E+03	1.16E+04	1.97E+03	1.66E-12
Lanthanum (57)	La-136	3.69E+04	1.88E-05		4.99E+02	4.99E+02	3.57E-15
Lanthanum (57)	La-137	1.16E-05	6.00E+04	4.63E+00	2.91E+04	4.63E+00	1.06E-07
Lanthanum (57)	La-138	6.79E-12	1.02E+11	2.69E-01	1.53E+02	2.69E-01	1.06E-02
Lanthanum (57)	La-140	1.51E+02	4.60E-03	3.23E+01	8.05E+01	2.31E+01	4.16E-14
Lanthanum (57)	La-141	1.55E+03	4.47E-04	1.01E+01	1.69E+03	1.01E+01	1.78E-15
Lanthanum (57)	La-142	4.00E+03	1.73E-04	4.08E+02	7.51E+01	6.34E+01	4.37E-15
Lanthanum (57)	La-143	2.57E+04	2.70E-05	1.18E+01	3.44E+02	1.14E+01	1.23E-16
Lutetium (71)	Lu-165	3.39E+04	2.04E-05	1.45E+02	1.01E+02	5.94E+01	5.61E-16
Lutetium (71)	Lu-167	7.07E+03	9.80E-05	2.86E+01	9.46E+01	2.20E+01	1.01E-15
Lutetium (71)	Lu-169	1.78E+02	3.89E-03	1.02E+01	1.23E+02	9.42E+00	1.73E-14
Lutetium (71)	Lu-169m	1.37E+05	5.07E-06	1.02E+01	1.23E+02	9.42E+00	2.26E-17

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Lutetium (71)	Lu-170	1.26E+02	5.51E-03	5.76E+01	7.15E+01	3.19E+01	8.37E-14
Lutetium (71)	Lu-171	3.07E+01	2.26E-02	3.93E+01	3.20E+02	3.50E+01	3.78E-13
Lutetium (71)	Lu-171m	2.77E+05	2.51E-06	3.93E+01	3.20E+02	3.50E+01	4.20E-17
Lutetium (71)	Lu-172	3.78E+01	1.84E-02	2.42E+01	9.97E+01	1.95E+01	1.72E-13
Lutetium (71)	Lu-172m	9.84E+04	7.04E-06	2.42E+01	9.97E+01	1.95E+01	6.61E-17
Lutetium (71)	Lu-173	5.06E-01	1.37E+00	1.11E+01	1.38E+03	1.10E+01	7.31E-12
Lutetium (71)	Lu-174	2.09E-01	3.31E+00	8.83E+00	2.00E+03	8.79E+00	1.42E-11
Lutetium (71)	Lu-174m	1.78E+00	3.89E-01	4.47E+00	1.44E+03	4.45E+00	8.44E-13
Lutetium (71)	Lu-176	1.80E-11	3.85E+10	2.71E-01	4.31E+02	2.71E-01	5.14E-03
Lutetium (71)	Lu-176m	1.67E+03	4.15E-04	3.31E+02	1.16E+04	3.21E+02	6.57E-14
Lutetium (71)	Lu-177	3.81E+01	1.82E-02	3.31E+01	5.95E+03	3.29E+01	2.97E-13
Lutetium (71)	Lu-177m	1.58E+00	4.39E-01	2.44E+00	2.10E+02	2.41E+00	5.25E-13
Lutetium (71)	Lu-178	1.28E+04	5.40E-05	1.48E+03	1.39E+03	7.16E+02	1.93E-14
Lutetium (71)	Lu-178m	1.58E+04	4.39E-05	1.18E+03	1.97E+02	1.69E+02	3.70E-15
Lutetium (71)	Lu-179	1.32E+03	5.24E-04	3.36E+02	5.48E+03	3.16E+02	8.30E-14
Lutetium (71)	Lu-180	6.39E+04	1.08E-05		1.26E+02	1.26E+02	6.89E-16
Lutetium (71)	Lu-181	1.04E+05	6.66E-06	6.69E+00	1.82E+02	6.45E+00	2.18E-17
Magnesium (12)	Mg-27	3.85E+04	1.80E-05		2.15E+02	2.15E+02	2.92E-16
Magnesium (12)	Mg-28	2.90E+02	2.39E-03	2.91E+01	5.85E+01	1.94E+01	3.64E-15
Manganese (25)	Mn-50m	2.08E+05	3.33E-06		4.10E+01	4.10E+01	1.91E-17
Manganese (25)	Mn-51	7.88E+03	8.79E-05	4.59E+02	1.92E+02	1.35E+02	1.70E-15
Manganese (25)	Mn-52	4.52E+01	1.53E-02	2.63E+01	5.51E+01	1.78E+01	3.97E-14
Manganese (25)	Mn-52m	1.73E+04	4.01E-05	6.76E+02	7.71E+01	6.92E+01	4.05E-16
Manganese (25)	Mn-53	1.87E-07	3.70E+06	1.20E+02		1.20E+02	6.56E-05
Manganese (25)	Mn-54	8.10E-01	8.55E-01	1.21E+01	2.33E+02	1.15E+01	1.49E-12
Manganese (25)	Mn-56	2.35E+03	2.94E-04	2.83E+02	1.09E+02	7.89E+01	3.64E-15
Manganese (25)	Mn-57	2.56E+05	2.71E-06		1.69E+03	1.69E+03	7.28E-16
Manganese (25)	Mn-58m	3.35E+05	2.07E-06		7.77E+01	7.77E+01	2.61E-17
Molybdenum (42)	Mo-101	2.49E+04	2.78E-05	9.63E+02	1.05E+02	9.48E+01	7.46E-16
Molybdenum (42)	Mo-102	3.22E+04	2.15E-05	1.45E+03	1.30E+03	6.86E+02	4.21E-15
Molybdenum (42)	Mo-89	1.73E+05	4.01E-06	5.52E+01	5.09E+01	2.65E+01	2.65E-17
Molybdenum (42)	Mo-90	1.09E+03	6.35E-04	3.57E+01	3.70E+01	1.82E+01	2.90E-15
Molybdenum (42)	Mo-91	2.35E+04	2.95E-05	2.19E+01	1.98E+02	1.97E+01	1.48E-16
Molybdenum (42)	Mo-91m	3.38E+05	2.05E-06	1.03E+01	1.02E+02	9.36E+00	4.88E-18
Molybdenum (42)	Mo-93	1.73E-04	4.00E+03	1.04E+01	4.54E+05	1.04E+01	1.08E-08
Molybdenum (42)	Mo-93m	8.86E+02	7.82E-04	9.89E+00	8.19E+01	8.83E+00	1.80E-15
Molybdenum (42)	Mo-99	9.21E+01	7.53E-03	2.84E+00	7.72E+02	2.83E+00	5.90E-15
Nitrogen (7)	N-13	3.66E+04	1.90E-05		1.95E+02	1.95E+02	1.35E-16
Nitrogen (7)	N-16	3.07E+06	2.26E-07		3.45E+01	3.45E+01	3.49E-19
Sodium (11)	Na-22	2.66E-01	2.60E+00	1.38E+00	8.76E+01	1.36E+00	2.19E-13
Sodium (11)	Na-24	4.06E+02	1.71E-03	7.48E+01	4.29E+01	2.73E+01	3.13E-15
Niobium (41)	Nb-87	9.71E+04	7.13E-06	5.42E+01	6.20E+01	2.89E+01	5.03E-17
Niobium (41)	Nb-88	2.51E+04	2.76E-05	4.00E+00	2.62E+01	3.47E+00	2.36E-17
Niobium (41)	Nb-88m	4.68E+04	1.48E-05	4.01E+00	2.64E+01	3.48E+00	1.27E-17
Niobium (41)	Nb-89	2.99E+03	2.32E-04	5.52E+01	7.55E+01	3.19E+01	1.84E-15
Niobium (41)	Nb-89m	5.52E+03	1.26E-04	6.32E+01	6.51E+01	3.21E+01	1.00E-15
Niobium (41)	Nb-90	4.16E+02	1.67E-03	5.49E+01	4.36E+01	2.43E+01	1.02E-14

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Niobium (41)	Nb-91	1.02E-03	6.80E+02	2.21E+01	1.06E+05	2.21E+01	3.84E-09
Niobium (41)	Nb-91m	4.16E+00	1.67E-01	6.74E+00	6.97E+03	6.73E+00	2.86E-13
Niobium (41)	Nb-92	2.00E-08	3.47E+07	1.54E+00	1.31E+02	1.52E+00	1.36E-05
Niobium (41)	Nb-92m	2.49E+01	2.78E-02	8.41E+01	2.01E+02	5.93E+01	4.25E-13
Niobium (41)	Nb-93m	4.30E-02	1.61E+01	2.09E+01	2.94E+06	2.09E+01	8.77E-11
Niobium (41)	Nb-94	3.41E-05	2.03E+04	8.54E-01	1.25E+02	8.48E-01	4.53E-09
Niobium (41)	Nb-94m	5.82E+04	1.19E-05	8.58E-01	1.26E+02	8.52E-01	2.67E-18
Niobium (41)	Nb-95	7.23E+00	9.59E-02	2.26E+01	2.56E+02	2.08E+01	5.30E-13
Niobium (41)	Nb-95m	7.01E+01	9.89E-03	1.55E+01	2.50E+02	1.46E+01	3.83E-14
Niobium (41)	Nb-96	2.60E+02	2.67E-03	5.55E+01	7.90E+01	3.26E+01	2.34E-14
Niobium (41)	Nb-97	5.05E+03	1.37E-04	8.19E+02	2.94E+02	2.16E+02	8.05E-15
Niobium (41)	Nb-98m	7.10E+03	9.76E-05	6.18E+02	6.77E+01	6.10E+01	1.63E-15
Niobium (41)	Nb-99	1.46E+06	4.76E-07	2.84E+00	4.49E+02	2.82E+00	3.72E-19
Niobium (41)	Nb-99m	1.40E+05	4.95E-06	2.84E+00	1.77E+02	2.80E+00	3.83E-18
Neodymium (60)	Nd-134	4.29E+04	1.62E-05	2.50E+01	5.44E+01	1.71E+01	1.04E-16
Neodymium (60)	Nd-135	2.94E+04	2.36E-05	1.80E+02	6.76E+01	4.91E+01	4.38E-16
Neodymium (60)	Nd-136	7.19E+03	9.64E-05	5.41E+02	8.08E+01	7.03E+01	2.58E-15
Neodymium (60)	Nd-137	9.46E+03	7.32E-05	4.59E+00	1.26E+02	4.43E+00	1.25E-16
Neodymium (60)	Nd-138	1.20E+03	5.75E-04	1.44E+02	2.33E+02	8.89E+01	1.98E-14
Neodymium (60)	Nd-139	1.23E+04	5.65E-05	2.01E+01	2.92E+02	1.88E+01	4.14E-16
Neodymium (60)	Nd-139m	1.10E+03	6.28E-04	1.87E+01	1.05E+02	1.58E+01	3.87E-15
Neodymium (60)	Nd-140	7.51E+01	9.23E-03	3.28E+01	3.59E+02	3.01E+01	1.09E-13
Neodymium (60)	Nd-141	2.44E+03	2.84E-04	6.84E+03	3.38E+03	2.26E+03	2.54E-13
Neodymium (60)	Nd-141m	3.52E+05	1.97E-06	6.84E+03	2.61E+02	2.51E+02	1.95E-16
Neodymium (60)	Nd-144	3.03E-16	2.29E+15	2.17E-03		2.17E-03	2.00E+00
Neodymium (60)	Nd-147	2.30E+01	3.01E-02	1.79E-03	1.55E+03	1.79E-03	2.21E-17
Neodymium (60)	Nd-149	3.51E+03	1.97E-04	4.62E+01	5.24E+02	4.25E+01	3.49E-15
Neodymium (60)	Nd-151	2.93E+04	2.37E-05	4.19E+00	1.66E+02	4.09E+00	4.09E-17
Neodymium (60)	Nd-152	3.20E+04	2.17E-05	1.56E+03	4.10E+02	3.25E+02	3.00E-15
Neon (10)	Ne-19	1.27E+06	5.46E-07		1.93E+02	1.93E+02	5.60E-18
Neon (10)	Ne-24	1.08E+05	6.43E-06	7.48E+01	3.84E+01	2.54E+01	1.10E-17
Nickel (28)	Ni-56	4.16E+01	1.66E-02	4.94E+00	3.51E+01	4.33E+00	1.13E-14
Nickel (28)	Ni-57	1.71E+02	4.06E-03	2.46E+01	9.22E+01	1.94E+01	1.26E-14
Nickel (28)	Ni-59	6.86E-06	1.01E+05	4.78E+01	1.29E+07	4.78E+01	7.97E-07
Nickel (28)	Ni-63	6.92E-03	1.00E+02	1.96E+01		1.96E+01	3.45E-10
Nickel (28)	Ni-65	2.41E+03	2.87E-04	1.08E+02	3.28E+02	8.11E+01	4.24E-15
Nickel (28)	Ni-66	1.11E+02	6.23E-03	2.04E+01	1.62E+03	2.01E+01	2.32E-14
Neptunium (93)	Np-232	2.48E+04	2.80E-05	5.06E-04	7.10E+01	5.06E-04	9.20E-21
Neptunium (93)	Np-233	1.01E+04	6.89E-05	4.22E-04	5.27E+02	4.22E-04	1.90E-20
Neptunium (93)	Np-234	5.75E+01	1.21E-02	3.22E-04	6.61E+01	3.22E-04	2.55E-18
Neptunium (93)	Np-235	6.39E-01	1.09E+00	1.34E-04	3.18E+02	1.34E-04	9.57E-17
Neptunium (93)	Np-236	4.50E-06	1.54E+05	3.95E-04	7.91E+01	3.95E-04	4.02E-11
Neptunium (93)	Np-236m	2.70E+02	2.57E-03	4.43E-04	9.40E+01	4.43E-04	7.52E-19
Neptunium (93)	Np-237	3.23E-07	2.14E+06	3.76E-04	3.77E+02	3.76E-04	5.35E-10
Neptunium (93)	Np-238	1.19E+02	5.80E-03	1.78E-04	8.11E+01	1.78E-04	6.87E-19
Neptunium (93)	Np-239	1.07E+02	6.46E-03	9.77E-05	2.52E+02	9.77E-05	4.22E-19
Neptunium (93)	Np-240	5.88E+03	1.18E-04	1.98E-04	5.59E+01	1.98E-04	1.57E-20

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Neptunium (93)	Np-240m	5.04E+04	1.37E-05	1.98E-04	7.02E+01	1.98E-04	1.83E-21
Neptunium (93)	Np-241	2.62E+04	2.64E-05	2.02E-04	3.41E+02	2.02E-04	3.60E-21
Neptunium (93)	Np-242	1.66E+05	4.19E-06	1.68E-04	9.11E+01	1.68E-04	4.78E-22
Neptunium (93)	Np-242m	6.62E+04	1.05E-05	1.68E-04	7.07E+01	1.68E-04	1.19E-21
Oxygen (8)	O-14	3.10E+05	2.24E-06		5.48E+01	5.48E+01	4.81E-18
Oxygen (8)	O-15	1.79E+05	3.88E-06		1.94E+02	1.94E+02	3.16E-17
Oxygen (8)	O-19	8.26E+05	8.39E-07		1.94E+02	1.94E+02	8.67E-18
Osmium (76)	Os-180	1.69E+04	4.09E-05	2.46E+03	1.51E+02	1.42E+02	2.94E-15
Osmium (76)	Os-181	3.47E+03	2.00E-04	6.11E+01	8.98E+01	3.64E+01	3.68E-15
Osmium (76)	Os-182	2.75E+02	2.52E-03	6.02E+01	1.21E+02	4.01E+01	5.16E-14
Osmium (76)	Os-183	4.67E+02	1.48E-03	1.05E+01	2.78E+02	1.01E+01	7.68E-15
Osmium (76)	Os-183m	6.13E+02	1.13E-03	1.05E+01	1.60E+02	9.87E+00	5.72E-15
Osmium (76)	Os-185	2.70E+00	2.56E-01	2.52E+01	2.92E+02	2.32E+01	3.08E-12
Osmium (76)	Os-186	3.47E-16	2.00E+15	9.67E-03		9.67E-03	1.01E+01
Osmium (76)	Os-189m	1.05E+03	6.62E-04	6.80E+03	8.67E+07	6.79E+03	2.38E-12
Osmium (76)	Os-190m	3.68E+04	1.88E-05		1.27E+02	1.27E+02	1.27E-15
Osmium (76)	Os-191	1.64E+01	4.22E-02	1.97E+01	3.03E+03	1.96E+01	4.43E-13
Osmium (76)	Os-191m	4.63E+02	1.50E-03	1.82E+01	2.85E+03	1.81E+01	1.45E-14
Osmium (76)	Os-193	2.02E+02	3.44E-03	6.85E+01	2.95E+03	6.70E+01	1.24E-13
Osmium (76)	Os-194	1.16E-01	6.00E+00	4.76E-01	1.85E+03	4.76E-01	1.55E-12
Osmium (76)	Os-196	1.04E+04	6.64E-05	6.57E+02	5.86E+02	3.10E+02	1.13E-14
Phosphorus (15)	P-30	1.46E+05	4.75E-06		1.90E+02	1.90E+02	7.60E-17
Phosphorus (15)	P-32	1.77E+01	3.91E-02	9.96E+00	1.67E+04	9.95E+00	3.49E-14
Phosphorus (15)	P-33	9.98E+00	6.94E-02	2.23E+01	6.20E+05	2.23E+01	1.43E-13
Protactinium (91)	Pa-227	9.51E+03	7.29E-05	1.37E-02	1.37E+03	1.37E-02	6.36E-19
Protactinium (91)	Pa-228	2.76E+02	2.51E-03	9.39E-04	6.64E+01	9.39E-04	1.51E-18
Protactinium (91)	Pa-229	1.69E+02	4.11E-03	4.70E-04	5.62E+02	4.70E-04	1.24E-18
Protactinium (91)	Pa-230	1.45E+01	4.77E-02	3.70E-04	8.43E+01	3.70E-04	1.14E-17
Protactinium (91)	Pa-231	2.12E-05	3.28E+04	1.38E-04	4.32E+02	1.38E-04	2.92E-12
Protactinium (91)	Pa-232	1.93E+02	3.59E-03	5.06E-04	7.78E+01	5.06E-04	1.18E-18
Protactinium (91)	Pa-233	9.38E+00	7.39E-02	4.22E-04	3.91E+02	4.22E-04	2.03E-17
Protactinium (91)	Pa-234	9.06E+02	7.65E-04	3.22E-04	5.97E+01	3.22E-04	1.62E-19
Protactinium (91)	Pa-234m	3.11E+05	2.23E-06	3.22E-04	1.06E+02	3.22E-04	4.70E-22
Protactinium (91)	Pa-235	1.49E+04	4.66E-05	1.34E-04	3.15E+02	1.34E-04	4.11E-21
Protactinium (91)	Pa-236	4.00E+04	1.73E-05	4.39E-04	5.73E+01	4.39E-04	5.02E-21
Protactinium (91)	Pa-237	4.19E+04	1.66E-05	3.76E-04	1.56E+02	3.76E-04	4.13E-21
Lead (82)	Pb-194	3.04E+04	2.28E-05	1.75E+00	6.45E+01	1.70E+00	2.11E-17
Lead (82)	Pb-195m	2.43E+04	2.85E-05	1.17E+01	6.27E+01	9.89E+00	1.54E-16
Lead (82)	Pb-196	9.84E+03	7.04E-05	5.67E+02	8.19E+01	7.16E+01	2.77E-15
Lead (82)	Pb-197	4.55E+04	1.52E-05	8.55E+00	9.50E+01	7.84E+00	6.58E-17
Lead (82)	Pb-197m	8.47E+03	8.18E-05	8.45E+00	1.01E+02	7.80E+00	3.52E-16
Lead (82)	Pb-198	2.53E+03	2.74E-04	2.60E+02	7.86E+01	6.04E+01	9.17E-15
Lead (82)	Pb-199	4.05E+03	1.71E-04	4.63E+02	1.53E+02	1.15E+02	1.10E-14
Lead (82)	Pb-200	2.82E+02	2.45E-03	7.05E+01	1.31E+02	4.59E+01	6.31E-14
Lead (82)	Pb-201	6.51E+02	1.07E-03	1.21E+02	2.44E+02	8.06E+01	4.83E-14
Lead (82)	Pb-201m	3.58E+05	1.93E-06	1.21E+02	1.69E+02	7.03E+01	7.65E-17
Lead (82)	Pb-202	1.32E-05	5.25E+04	8.18E-01	4.53E+02	8.16E-01	2.42E-08

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Lead (82)	Pb-202m	1.72E+03	4.03E-04	9.00E-01	8.10E+01	8.90E-01	2.03E-16
Lead (82)	Pb-203	1.17E+02	5.92E-03	1.69E+02	6.82E+02	1.35E+02	4.56E-13
Lead (82)	Pb-204m	5.42E+03	1.28E-04	1.23E+03	9.45E+01	8.78E+01	6.41E-15
Lead (82)	Pb-205	4.53E-08	1.53E+07	4.91E+01	1.82E+07	4.91E+01	4.31E-04
Lead (82)	Pb-209	1.87E+03	3.71E-04	6.25E+02	8.93E+04	6.21E+02	1.35E-13
Lead (82)	Pb-210	3.12E-02	2.22E+01	4.02E-03	2.92E+04	4.02E-03	5.25E-14
Lead (82)	Pb-211	1.01E+04	6.87E-05	3.21E+00	1.55E+03	3.20E+00	1.30E-16
Lead (82)	Pb-212	5.71E+02	1.21E-03	3.59E-01	1.25E+02	3.58E-01	2.58E-16
Lead (82)	Pb-214	1.36E+04	5.10E-05	4.01E-03	1.08E+02	4.01E-03	1.23E-19
Palladium (46)	Pd-100	6.97E+01	9.95E-03	3.22E+01	6.58E+01	2.16E+01	6.03E-14
Palladium (46)	Pd-101	7.17E+02	9.67E-04	6.41E+01	3.23E+02	5.35E+01	1.46E-14
Palladium (46)	Pd-103	1.49E+01	4.66E-02	8.67E+01	1.53E+05	8.67E+01	1.16E-12
Palladium (46)	Pd-107	1.07E-07	6.50E+06	6.62E+01		6.62E+01	1.29E-04
Palladium (46)	Pd-109	4.43E+02	1.56E-03	9.92E+01	2.13E+04	9.87E+01	4.71E-14
Palladium (46)	Pd-109m	7.77E+04	8.92E-06	9.92E+01	1.78E+03	9.39E+01	2.56E-16
Palladium (46)	Pd-111	1.56E+04	4.45E-05	2.23E+01	2.01E+03	2.20E+01	3.05E-16
Palladium (46)	Pd-112	2.89E+02	2.40E-03	2.85E+01	2.63E+02	2.57E+01	1.94E-14
Palladium (46)	Pd-114	1.51E+05	4.60E-06		5.55E+02	5.55E+02	8.16E-16
Palladium (46)	Pd-96	1.79E+05	3.87E-06		3.82E+01	3.82E+01	3.97E-17
Palladium (46)	Pd-97	1.17E+05	5.90E-06	2.11E+01	4.74E+01	1.46E+01	2.34E-17
Palladium (46)	Pd-98	2.06E+04	3.37E-05	1.30E+03	8.84E+01	8.28E+01	7.65E-16
Palladium (46)	Pd-99	1.70E+04	4.07E-05	3.71E+02	1.02E+02	8.00E+01	9.03E-16
Promethium (61)	Pm-136	2.04E+05	3.39E-06	5.41E+02	3.79E+01	3.54E+01	4.58E-17
Promethium (61)	Pm-137m	1.52E+05	4.57E-06	4.59E+00	5.92E+01	4.26E+00	7.46E-18
Promethium (61)	Pm-139	8.78E+04	7.90E-06	2.01E+01	1.22E+02	1.73E+01	5.31E-17
Promethium (61)	Pm-140	2.38E+06	2.92E-07	3.28E+01	1.20E+02	2.58E+01	2.95E-18
Promethium (61)	Pm-140m	6.12E+04	1.13E-05	3.28E+01	5.45E+01	2.05E+01	9.09E-17
Promethium (61)	Pm-141	1.74E+04	3.98E-05	1.84E+03	2.47E+02	2.18E+02	3.42E-15
Promethium (61)	Pm-142	5.40E+05	1.28E-06		2.26E+02	2.26E+02	1.15E-16
Promethium (61)	Pm-143	9.55E-01	7.26E-01	1.33E+01	6.62E+02	1.31E+01	3.80E-12
Promethium (61)	Pm-144	6.97E-01	9.95E-01	2.17E-03	1.29E+02	2.17E-03	8.70E-16
Promethium (61)	Pm-145	3.92E-02	1.77E+01	5.06E+00	1.62E+04	5.06E+00	3.64E-11
Promethium (61)	Pm-146	1.25E-01	5.53E+00	4.78E-03	2.68E+02	4.78E-03	1.08E-14
Promethium (61)	Pm-147	2.64E-01	2.62E+00	1.79E-03	1.03E+06	1.79E-03	1.93E-15
Promethium (61)	Pm-148	4.71E+01	1.47E-02	1.06E-03	3.24E+02	1.06E-03	6.47E-18
Promethium (61)	Pm-148m	6.13E+00	1.13E-01	1.06E-03	9.81E+01	1.06E-03	4.98E-17
Promethium (61)	Pm-149	1.14E+02	6.06E-03	5.21E+01	1.18E+04	5.18E+01	1.31E-13
Promethium (61)	Pm-150	2.27E+03	3.06E-04	2.80E+02	1.28E+02	8.79E+01	1.13E-14
Promethium (61)	Pm-151	2.14E+02	3.24E-03	4.20E+00	6.20E+02	4.17E+00	5.71E-15
Promethium (61)	Pm-152	8.84E+04	7.84E-06		6.16E+02	6.16E+02	2.05E-15
Promethium (61)	Pm-152m	4.84E+04	1.43E-05		1.26E+02	1.26E+02	7.69E-16
Promethium (61)	Pm-153	6.94E+04	9.99E-06	5.52E+01	1.62E+03	5.34E+01	2.29E-16
Promethium (61)	Pm-154	2.11E+05	3.29E-06		1.02E+02	1.02E+02	1.45E-16
Promethium (61)	Pm-154m	1.36E+05	5.10E-06		1.05E+02	1.05E+02	2.31E-16
Polonium (84)	Po-203	9.92E+03	6.98E-05	6.67E+01	4.43E+01	2.66E+01	1.06E-15
Polonium (84)	Po-204	1.72E+03	4.03E-04	5.15E+01	4.57E+01	2.42E+01	5.57E-15
Polonium (84)	Po-205	3.66E+03	1.89E-04	2.01E+01	5.84E+01	1.50E+01	1.63E-15

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Polonium (84)	Po-206	2.87E+01	2.41E-02	5.75E-01	4.53E+01	5.68E-01	7.90E-15
Polonium (84)	Po-207	1.05E+03	6.62E-04	1.07E+00	6.93E+01	1.05E+00	4.03E-16
Polonium (84)	Po-208	2.39E-01	2.90E+00	5.88E-03	2.26E+06	5.88E-03	9.92E-15
Polonium (84)	Po-209	6.79E-03	1.02E+02	4.28E-03	3.23E+04	4.28E-03	2.55E-13
Polonium (84)	Po-210	1.83E+00	3.79E-01	9.32E-03	2.01E+07	9.32E-03	2.08E-15
Polonium (84)	Po-211	4.24E+07	1.64E-08		2.39E+04	2.39E+04	2.31E-16
Polonium (84)	Po-212	7.31E+13	9.48E-15				
Polonium (84)	Po-212m	4.85E+05	1.43E-06		2.24E+03	2.24E+03	1.90E-15
Polonium (84)	Po-213	5.20E+12	1.33E-13	6.25E+02	8.78E+04	6.21E+02	4.93E-23
Polonium (84)	Po-214	1.33E+11	5.21E-12	4.02E-03	2.89E+04	4.02E-03	1.25E-26
Polonium (84)	Po-215	1.23E+10	5.65E-11	3.21E+00	1.55E+03	3.20E+00	1.09E-22
Polonium (84)	Po-216	1.51E+08	4.60E-09	3.59E-01	1.25E+02	3.58E-01	9.94E-22
Polonium (84)	Po-218	1.17E+05	5.90E-06	4.01E-03	1.08E+02	4.01E-03	1.44E-20
Praseodymium (59)	Pr-134	3.31E+04	2.09E-05	2.51E+01	5.05E+01	1.68E+01	1.32E-16
Praseodymium (59)	Pr-134m	2.14E+04	3.23E-05	2.50E+01	6.33E+01	1.79E+01	2.17E-16
Praseodymium (59)	Pr-135	1.52E+04	4.57E-05	2.07E+02	1.18E+02	7.51E+01	1.30E-15
Praseodymium (59)	Pr-136	2.78E+04	2.49E-05	2.60E+03	8.98E+01	8.68E+01	8.23E-16
Praseodymium (59)	Pr-137	4.74E+03	1.46E-04	4.61E+00	5.15E+02	4.57E+00	2.56E-16
Praseodymium (59)	Pr-138	2.51E+05	2.76E-06		2.39E+02	2.39E+02	2.55E-16
Praseodymium (59)	Pr-138m	2.86E+03	2.42E-04	4.80E+02	7.90E+01	6.79E+01	6.35E-15
Praseodymium (59)	Pr-139	1.38E+03	5.03E-04	2.03E+01	8.06E+02	1.98E+01	3.87E-15
Praseodymium (59)	Pr-140	1.07E+05	6.45E-06		3.66E+02	3.66E+02	9.25E-16
Praseodymium (59)	Pr-142	3.18E+02	2.18E-03	6.54E+01	2.56E+03	6.38E+01	5.53E-14
Praseodymium (59)	Pr-142m	2.49E+04	2.78E-05	6.46E+01	2.56E+03	6.30E+01	6.96E-16
Praseodymium (59)	Pr-143	1.86E+01	3.72E-02	1.60E+01	4.58E+04	1.60E+01	2.39E-13
Praseodymium (59)	Pr-144	2.11E+04	3.29E-05	2.17E-03	3.56E+03	2.17E-03	2.88E-20
Praseodymium (59)	Pr-144m	5.06E+04	1.37E-05	2.17E-03	3.24E+03	2.17E-03	1.20E-20
Praseodymium (59)	Pr-145	1.01E+03	6.83E-04	2.17E+02	6.52E+03	2.10E+02	5.83E-14
Praseodymium (59)	Pr-146	1.51E+04	4.59E-05	1.22E+03	1.82E+02	1.58E+02	2.97E-15
Praseodymium (59)	Pr-147	2.72E+04	2.55E-05	1.79E-03	3.24E+02	1.79E-03	1.88E-20
Praseodymium (59)	Pr-148	1.59E+05	4.36E-06		1.85E+02	1.85E+02	3.34E-16
Praseodymium (59)	Pr-148m	1.81E+05	3.82E-06		2.04E+02	2.04E+02	3.24E-16
Platinum (78)	Pt-184	2.11E+04	3.29E-05	2.43E+02	7.42E+01	5.69E+01	9.64E-16
Platinum (78)	Pt-186	2.92E+03	2.37E-04	9.67E-03	8.35E+01	9.67E-03	1.20E-18
Platinum (78)	Pt-187	2.58E+03	2.68E-04	2.51E+02	2.20E+02	1.17E+02	1.65E-14
Platinum (78)	Pt-188	2.48E+01	2.79E-02	1.53E+01	8.19E+01	1.29E+01	1.90E-13
Platinum (78)	Pt-189	5.58E+02	1.24E-03	5.24E+01	3.84E+02	4.61E+01	3.03E-14
Platinum (78)	Pt-190	1.07E-12	6.50E+11	4.32E-03		4.32E-03	1.50E-03
Platinum (78)	Pt-191	9.03E+01	7.68E-03	1.04E+02	7.57E+02	9.11E+01	3.74E-13
Platinum (78)	Pt-193	1.39E-02	5.00E+01	6.00E+01	3.16E+07	6.00E+01	1.62E-09
Platinum (78)	Pt-193m	5.84E+01	1.19E-02	2.41E+01	2.43E+04	2.41E+01	1.55E-13
Platinum (78)	Pt-195m	6.29E+01	1.10E-02	3.38E+01	3.65E+03	3.35E+01	2.02E-13
Platinum (78)	Pt-197	3.05E+02	2.27E-03	1.01E+02	9.01E+03	1.00E+02	1.25E-13
Platinum (78)	Pt-197m	3.82E+03	1.82E-04	8.57E+01	2.12E+03	8.24E+01	8.25E-15
Platinum (78)	Pt-199	1.18E+04	5.86E-05	4.68E+01	6.77E+02	4.37E+01	1.43E-15
Platinum (78)	Pt-200	4.86E+02	1.43E-03	5.78E+01	5.71E+02	5.25E+01	4.19E-14
Platinum (78)	Pt-202	1.38E+02	5.02E-03	1.67E+01	9.50E+02	1.64E+01	4.67E-14

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Plutonium (94)	Pu-232	1.08E+04	6.41E-05	6.57E-04	8.98E+01	6.57E-04	2.74E-20
Plutonium (94)	Pu-234	6.90E+02	1.00E-03	3.38E-04	6.89E+01	3.38E-04	2.23E-19
Plutonium (94)	Pu-235	1.44E+04	4.81E-05	1.34E-04	2.83E+02	1.34E-04	4.24E-21
Plutonium (94)	Pu-236	2.42E-01	2.86E+00	4.47E-04	1.24E+02	4.47E-04	8.45E-16
Plutonium (94)	Pu-237	5.60E+00	1.24E-01	3.76E-04	3.50E+02	3.76E-04	3.09E-17
Plutonium (94)	Pu-238	7.90E-03	8.77E+01	1.78E-04	1.08E+02	1.78E-04	1.04E-14
Plutonium (94)	Pu-239	2.87E-05	2.41E+04	9.77E-05	3.19E+02	9.77E-05	1.58E-12
Plutonium (94)	Pu-240	1.06E-04	6.56E+03	1.98E-04	7.95E+01	1.98E-04	8.73E-13
Plutonium (94)	Pu-241	4.83E-02	1.44E+01	2.02E-04	3.66E+02	2.02E-04	1.95E-15
Plutonium (94)	Pu-242	1.85E-06	3.75E+05	1.68E-04	1.05E+02	1.68E-04	4.28E-11
Plutonium (94)	Pu-243	1.22E+03	5.66E-04	8.02E-05	2.33E+02	8.02E-05	3.09E-20
Plutonium (94)	Pu-244	8.66E-09	8.00E+07	1.31E-04	6.96E+01	1.31E-04	7.16E-09
Plutonium (94)	Pu-245	5.78E+02	1.20E-03	1.38E-04	1.86E+02	1.38E-04	1.13E-19
Plutonium (94)	Pu-246	2.33E+01	2.97E-02	1.22E-04	6.57E+01	1.22E-04	2.49E-18
Radium (88)	Ra-219	2.19E+09	3.17E-10		1.15E+03	1.15E+03	2.24E-19
Radium (88)	Ra-220	1.22E+09	5.68E-10		4.31E+04	4.31E+04	1.51E-17
Radium (88)	Ra-221	7.81E+05	8.88E-07	6.25E+02	5.68E+03	5.63E+02	3.09E-16
Radium (88)	Ra-222	5.75E+05	1.20E-06	4.02E-03	1.20E+04	4.02E-03	3.01E-21
Radium (88)	Ra-223	2.21E+01	3.13E-02	4.64E-03	6.35E+02	4.64E-03	9.07E-17
Radium (88)	Ra-224	6.91E+01	1.00E-02	1.16E-02	1.24E+02	1.16E-02	7.29E-17
Radium (88)	Ra-225	1.70E+01	4.08E-02	2.48E-03	8.72E+02	2.48E-03	6.37E-17
Radium (88)	Ra-226	4.33E-04	1.60E+03	2.06E-03	1.08E+02	2.06E-03	2.09E-12
Radium (88)	Ra-227	8.63E+03	8.03E-05	5.48E-04	3.49E+02	5.48E-04	2.80E-20
Radium (88)	Ra-228	1.21E-01	5.75E+00	6.78E-04	7.95E+01	6.78E-04	2.49E-15
Radium (88)	Ra-230	3.92E+03	1.77E-04	3.49E-04	7.92E+01	3.49E-04	3.97E-20
Rubidium (37)	Rb-77	9.66E+04	7.17E-06	4.08E+02	6.80E+01	5.83E+01	9.02E-17
Rubidium (37)	Rb-78	2.06E+04	3.36E-05	1.23E+03	4.38E+01	4.23E+01	3.10E-16
Rubidium (37)	Rb-78m	6.35E+04	1.09E-05	1.23E+04	5.18E+01	5.16E+01	1.23E-16
Rubidium (37)	Rb-79	1.59E+04	4.36E-05	1.28E+03	1.17E+02	1.07E+02	1.03E-15
Rubidium (37)	Rb-80	6.54E+05	1.06E-06		1.61E+02	1.61E+02	3.82E-17
Rubidium (37)	Rb-81	1.33E+03	5.22E-04	5.22E+02	3.20E+02	1.99E+02	2.35E-14
Rubidium (37)	Rb-81m	1.19E+04	5.80E-05	4.33E+02	3.16E+02	1.83E+02	2.40E-15
Rubidium (37)	Rb-82	2.86E+05	2.42E-06		1.75E+02	1.75E+02	9.76E-17
Rubidium (37)	Rb-82m	9.38E+02	7.39E-04	2.45E+02	6.67E+01	5.24E+01	8.89E-15
Rubidium (37)	Rb-83	2.93E+00	2.36E-01	2.80E+01	4.13E+02	2.62E+01	1.44E-12
Rubidium (37)	Rb-84	7.72E+00	8.98E-02	1.35E+01	2.16E+02	1.27E+01	2.68E-13
Rubidium (37)	Rb-84m	1.80E+04	3.85E-05	1.34E+01	1.54E+02	1.23E+01	1.12E-16
Rubidium (37)	Rb-86	1.36E+01	5.11E-02	8.28E+00	1.83E+03	8.24E+00	1.01E-13
Rubidium (37)	Rb-86m	3.58E+05	1.93E-06	8.28E+00	3.05E+02	8.06E+00	3.76E-18
Rubidium (37)	Rb-87	1.41E-11	4.92E+10	2.60E+00	2.50E+05	2.60E+00	3.11E-02
Rubidium (37)	Rb-88	2.05E+04	3.38E-05	1.31E+03	2.65E+02	2.20E+02	1.84E-15
Rubidium (37)	Rb-89	2.40E+04	2.88E-05	4.93E+00	8.16E+01	4.65E+00	3.34E-17
Rubidium (37)	Rb-90	1.38E+05	5.01E-06	2.63E-01	8.20E+01	2.62E-01	3.31E-19
Rubidium (37)	Rb-90m	8.47E+04	8.18E-06	2.63E-01	5.36E+01	2.62E-01	5.40E-19
Rhenium (75)	Re-178	2.76E+04	2.51E-05	4.60E+01	1.03E+02	3.18E+01	3.98E-16
Rhenium (75)	Re-179	1.87E+04	3.71E-05	7.78E+01	1.73E+02	5.37E+01	9.98E-16
Rhenium (75)	Re-180	1.49E+05	4.64E-06		1.64E+02	1.64E+02	3.84E-16

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Rhenium (75)	Re-181	3.05E+02	2.27E-03	6.83E+01	2.46E+02	5.34E+01	6.15E-14
Rhenium (75)	Re-182	9.49E+01	7.31E-03	2.95E+01	1.10E+02	2.33E+01	8.66E-14
Rhenium (75)	Re-182m	4.78E+02	1.45E-03	1.70E+02	1.60E+02	8.25E+01	6.09E-14
Rhenium (75)	Re-183	3.61E+00	1.92E-01	1.11E+01	1.62E+03	1.10E+01	1.08E-12
Rhenium (75)	Re-184	6.66E+00	1.04E-01	1.70E+01	2.24E+02	1.58E+01	8.46E-13
Rhenium (75)	Re-184m	1.50E+00	4.63E-01	3.32E+00	1.92E+02	3.26E+00	7.79E-13
Rhenium (75)	Re-186	6.80E+01	1.02E-02	1.05E-02	8.98E+03	1.05E-02	5.54E-17
Rhenium (75)	Re-186m	3.47E-06	2.00E+05	1.03E-02	6.29E+03	1.03E-02	1.07E-09
Rhenium (75)	Re-187	1.68E-11	4.12E+10	1.02E+03		1.02E+03	2.21E+01
Rhenium (75)	Re-188	3.57E+02	1.94E-03	6.53E+01	2.71E+03	6.38E+01	6.52E-14
Rhenium (75)	Re-188m	1.96E+04	3.54E-05	6.37E+01	1.61E+03	6.13E+01	1.14E-15
Rhenium (75)	Re-189	2.50E+02	2.77E-03	8.61E+01	3.50E+03	8.40E+01	1.23E-13
Rhenium (75)	Re-190	1.17E+05	5.90E-06		1.48E+02	1.48E+02	4.64E-16
Rhenium (75)	Re-190m	1.90E+03	3.65E-04	1.79E+02	1.30E+02	7.52E+01	1.46E-14
Rhodium (45)	Rh-100	2.92E+02	2.37E-03	1.05E+02	6.77E+01	4.12E+01	2.74E-14
Rhodium (45)	Rh-100m	7.92E+04	8.75E-06	1.07E+02	6.78E+01	4.15E+01	1.02E-16
Rhodium (45)	Rh-101	2.10E-01	3.30E+00	7.85E+00	7.63E+02	7.77E+00	7.25E-12
Rhodium (45)	Rh-101m	5.83E+01	1.19E-02	7.35E+01	6.95E+02	6.64E+01	2.23E-13
Rhodium (45)	Rh-102	1.22E+00	5.67E-01	5.45E+00	3.99E+02	5.37E+00	8.70E-13
Rhodium (45)	Rh-102m	1.85E-01	3.74E+00	2.05E+00	9.16E+01	2.00E+00	2.14E-12
Rhodium (45)	Rh-103m	6.49E+03	1.07E-04	1.41E+04	1.59E+06	1.39E+04	4.30E-13
Rhodium (45)	Rh-104	5.17E+05	1.34E-06		6.38E+03	6.38E+03	2.49E-15
Rhodium (45)	Rh-104m	8.39E+04	8.26E-06		3.86E+03	3.86E+03	9.29E-15
Rhodium (45)	Rh-105	1.72E+02	4.04E-03	1.09E+02	2.57E+03	1.04E+02	1.24E-13
Rhodium (45)	Rh-106	7.33E+05	9.45E-07		8.35E+02	8.35E+02	2.34E-16
Rhodium (45)	Rh-106m	2.78E+03	2.49E-04	3.31E+02	6.77E+01	5.62E+01	4.15E-15
Rhodium (45)	Rh-107	1.68E+04	4.13E-05	6.43E+01	6.33E+02	5.84E+01	7.22E-16
Rhodium (45)	Rh-108	1.30E+06	5.33E-07		5.55E+02	5.55E+02	8.94E-17
Rhodium (45)	Rh-109	2.73E+05	2.54E-06	9.92E+01	6.28E+02	8.56E+01	6.63E-17
Rhodium (45)	Rh-94	3.10E+05	2.24E-06	3.48E+02	3.03E+01	2.79E+01	1.64E-17
Rhodium (45)	Rh-95	7.26E+04	9.55E-06	2.00E+02	4.18E+01	3.46E+01	8.79E-17
Rhodium (45)	Rh-95m	1.86E+05	3.73E-06	2.00E+02	3.69E+01	3.12E+01	3.09E-17
Rhodium (45)	Rh-96	3.68E+04	1.88E-05		4.93E+01	4.93E+01	2.50E-16
Rhodium (45)	Rh-96m	2.41E+05	2.87E-06		5.29E+01	5.29E+01	4.08E-17
Rhodium (45)	Rh-97	1.19E+04	5.84E-05	2.11E+01	1.18E+02	1.79E+01	2.84E-16
Rhodium (45)	Rh-97m	7.88E+03	8.79E-05	2.10E+01	7.46E+01	1.64E+01	3.92E-16
Rhodium (45)	Rh-98	4.19E+04	1.66E-05		1.07E+02	1.07E+02	4.86E-16
Rhodium (45)	Rh-99	1.57E+01	4.41E-02	3.09E+01	3.69E+02	2.85E+01	3.49E-13
Rhodium (45)	Rh-99m	1.29E+03	5.37E-04	8.89E+02	3.09E+02	2.29E+02	3.41E-14
Radon (86)	Rn-207	3.94E+04	1.76E-05	1.38E+00	3.41E+01	1.33E+00	1.35E-17
Radon (86)	Rn-209	1.28E+04	5.42E-05	5.37E-03	5.28E+01	5.37E-03	1.70E-19
Radon (86)	Rn-210	2.53E+03	2.74E-04	1.68E-01	4.52E+01	1.67E-01	2.69E-17
Radon (86)	Rn-211	4.16E+02	1.67E-03	3.70E-01	6.21E+01	3.68E-01	3.62E-16
Radon (86)	Rn-212	1.52E+04	4.55E-05	5.88E-03	4.64E+05	5.88E-03	1.59E-19
Radon (86)	Rn-215	9.50E+12	7.29E-14		2.39E+04	2.39E+04	1.05E-21
Radon (86)	Rn-216	4.86E+11	1.43E-12				
Radon (86)	Rn-217	4.05E+10	1.71E-11	6.25E+02	8.78E+04	6.21E+02	6.46E-21

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Radon (86)	Rn-218	6.24E+08	1.11E-09	4.02E-03	2.60E+04	4.02E-03	2.72E-24
Radon (86)	Rn-219	5.52E+06	1.26E-07	3.21E+00	1.07E+03	3.20E+00	2.46E-19
Radon (86)	Rn-220	3.93E+05	1.76E-06	3.58E-01	1.25E+02	3.57E-01	3.88E-19
Radon (86)	Rn-222	6.62E+01	1.05E-02	4.01E-03	1.08E+02	4.01E-03	2.61E-17
Radon (86)	Rn-223	1.50E+04	4.62E-05	4.63E-03	2.81E+02	4.63E-03	1.34E-19
Ruthenium (44)	Ru-103	6.44E+00	1.08E-01	1.38E+01	4.04E+02	1.34E+01	4.15E-13
Ruthenium (44)	Ru-105	1.37E+03	5.07E-04	6.88E+01	2.39E+02	5.34E+01	7.96E-15
Ruthenium (44)	Ru-106	6.77E-01	1.02E+00	6.03E-01	8.35E+02	6.03E-01	1.83E-13
Ruthenium (44)	Ru-107	9.71E+04	7.13E-06	6.43E+01	2.88E+02	5.26E+01	1.12E-16
Ruthenium (44)	Ru-108	8.01E+04	8.66E-06		4.70E+02	4.70E+02	1.23E-15
Ruthenium (44)	Ru-92	9.98E+04	6.94E-06		3.27E+01	3.27E+01	5.84E-17
Ruthenium (44)	Ru-94	7.03E+03	9.86E-05	3.48E+02	7.84E+01	6.40E+01	1.66E-15
Ruthenium (44)	Ru-95	3.69E+03	1.88E-04	2.00E+02	9.65E+01	6.51E+01	3.25E-15
Ruthenium (44)	Ru-97	8.72E+01	7.95E-03	2.14E+01	8.95E+02	2.09E+01	4.51E-14
Sulfur (16)	S-35	2.89E+00	2.40E-01	2.14E+01	2.91E+06	2.14E+01	5.02E-13
Sulphur (16)	S-37	7.21E+04	9.61E-06		5.80E+01	5.80E+01	5.77E-17
Sulfur (16)	S-38	2.14E+03	3.24E-04	1.06E+02	5.64E+01	3.69E+01	1.27E-15
Antimony (51)	Sb-111	2.91E+05	2.38E-06	1.44E+02	8.37E+01	5.30E+01	3.92E-17
Antimony (51)	Sb-113	5.46E+04	1.27E-05	9.97E+00	1.30E+02	9.26E+00	3.72E-17
Antimony (51)	Sb-114	1.04E+05	6.64E-06		7.03E+01	7.03E+01	1.49E-16
Antimony (51)	Sb-115	1.13E+04	6.11E-05	2.68E+03	2.27E+02	2.09E+02	4.11E-15
Antimony (51)	Sb-116	2.31E+04	3.01E-05	2.48E+03	8.27E+01	8.00E+01	7.81E-16
Antimony (51)	Sb-116m	6.04E+03	1.15E-04	7.72E+02	6.25E+01	5.78E+01	2.15E-15
Antimony (51)	Sb-117	2.17E+03	3.20E-04	2.09E+03	1.24E+03	7.76E+02	8.13E-14
Antimony (51)	Sb-118	1.01E+05	6.85E-06		2.45E+02	2.45E+02	5.54E-16
Antimony (51)	Sb-118m	1.21E+03	5.71E-04	2.91E+02	7.38E+01	5.89E+01	1.11E-14
Antimony (51)	Sb-119	1.59E+02	4.36E-03	9.15E+02	5.91E+04	9.01E+02	1.31E-12
Antimony (51)	Sb-120	2.29E+04	3.02E-05	5.01E+03	4.47E+02	4.10E+02	4.17E-15
Antimony (51)	Sb-120m	4.39E+01	1.58E-02	3.44E+01	7.90E+01	2.39E+01	1.27E-13
Antimony (51)	Sb-122	9.29E+01	7.46E-03	3.31E+01	4.38E+02	3.07E+01	7.83E-14
Antimony (51)	Sb-122m	8.69E+04	7.97E-06	3.31E+01	4.03E+02	3.05E+01	8.32E-17
Antimony (51)	Sb-124	4.20E+00	1.65E-01	4.60E+00	1.01E+02	4.40E+00	2.52E-13
Antimony (51)	Sb-124m	2.35E+05	2.95E-06	6.13E+00	1.04E+02	5.79E+00	5.93E-18
Antimony (51)	Sb-124n	1.80E+04	3.84E-05	6.12E+00	1.04E+02	5.78E+00	7.72E-17
Antimony (51)	Sb-125	2.51E-01	2.76E+00	3.11E+00	4.68E+02	3.09E+00	2.98E-12
Antimony (51)	Sb-126	2.05E+01	3.38E-02	1.10E+01	7.15E+01	9.52E+00	1.14E-13
Antimony (51)	Sb-126m	1.90E+04	3.64E-05	7.53E+01	1.02E+02	4.33E+01	5.56E-16
Antimony (51)	Sb-127	6.57E+01	1.05E-02	1.04E+01	2.81E+02	1.00E+01	3.75E-14
Antimony (51)	Sb-128	6.74E+02	1.03E-03	8.28E+01	6.33E+01	3.59E+01	1.32E-14
Antimony (51)	Sb-128m	3.50E+04	1.98E-05	1.19E+03	9.67E+01	8.94E+01	6.34E-16
Antimony (51)	Sb-129	1.38E+03	5.02E-04	3.95E-01	1.25E+02	3.94E-01	7.15E-17
Antimony (51)	Sb-130	9.22E+03	7.52E-05	6.77E+02	5.91E+01	5.44E+01	1.49E-15
Antimony (51)	Sb-130m	5.78E+04	1.20E-05		7.09E+01	7.09E+01	3.09E-16
Antimony (51)	Sb-131	1.58E+04	4.38E-05	1.65E+00	6.43E+01	1.61E+00	2.58E-17
Antimony (51)	Sb-133	1.46E+05	4.76E-06	7.80E+00	3.96E+01	6.52E+00	1.15E-17
Scandium (21)	Sc-42m	3.52E+05	1.97E-06		4.51E+01	4.51E+01	1.04E-17
Scandium (21)	Sc-43	1.56E+03	4.44E-04	2.93E+02	2.03E+02	1.20E+02	6.40E-15

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Scandium (21)	Sc-44	1.53E+03	4.53E-04	1.96E+02	9.05E+01	6.19E+01	3.45E-15
Scandium (21)	Sc-44m	1.04E+02	6.69E-03	2.33E+01	8.14E+01	1.81E+01	1.49E-14
Scandium (21)	Sc-46	3.02E+00	2.30E-01	5.85E+00	9.53E+01	5.51E+00	1.63E-13
Scandium (21)	Sc-47	7.55E+01	9.18E-03	5.37E+01	1.90E+03	5.23E+01	6.31E-14
Scandium (21)	Sc-48	1.39E+02	4.99E-03	3.36E+01	5.65E+01	2.11E+01	1.41E-14
Scandium (21)	Sc-49	6.37E+03	1.09E-04	9.34E+02	1.25E+04	8.69E+02	1.30E-14
Scandium (21)	Sc-50	2.13E+05	3.25E-06		5.80E+01	5.80E+01	2.64E-17
Selenium (34)	Se-70	8.86E+03	7.82E-05	2.60E+02	3.86E+01	3.36E+01	5.15E-16
Selenium (34)	Se-71	7.68E+04	9.02E-06	9.62E+01	8.98E+01	4.64E+01	8.33E-17
Selenium (34)	Se-72	3.01E+01	2.30E-02	8.23E+00	1.08E+02	7.65E+00	3.55E-14
Selenium (34)	Se-73	8.49E+02	8.16E-04	2.46E+01	1.85E+02	2.17E+01	3.63E-15
Selenium (34)	Se-73m	9.15E+03	7.57E-05	2.52E+01	1.91E+02	2.23E+01	3.45E-16
Selenium (34)	Se-75	2.11E+00	3.28E-01	2.99E+01	5.38E+02	2.83E+01	1.95E-12
Selenium (34)	Se-77m	1.26E+06	5.50E-07		2.41E+03	2.41E+03	2.86E-16
Selenium (34)	Se-79	2.35E-06	2.95E+05	6.43E+00	2.93E+06	6.43E+00	4.20E-07
Selenium (34)	Se-79m	9.29E+04	7.46E-06	6.44E+00	2.46E+04	6.44E+00	1.06E-17
Selenium (34)	Se-81	1.97E+04	3.51E-05	2.54E+03	1.09E+04	2.06E+03	1.64E-14
Selenium (34)	Se-81m	6.36E+03	1.09E-04	5.70E+02	6.52E+03	5.24E+02	1.29E-14
Selenium (34)	Se-83	1.63E+04	4.24E-05	4.35E+02	7.17E+01	6.16E+01	6.07E-16
Selenium (34)	Se-83m	3.12E+05	2.22E-06	7.22E+02	1.85E+02	1.47E+02	7.60E-17
Selenium (34)	Se-84	1.17E+05	5.90E-06	9.44E+02	8.29E+01	7.62E+01	1.06E-16
Silicon (14)	Si-31	2.32E+03	2.99E-04	4.69E+02	1.85E+04	4.58E+02	1.19E-14
Silicon (14)	Si-32	5.25E-03	1.32E+02	3.62E-01	1.63E+04	3.62E-01	4.29E-12
Samarium (62)	Sm-139	1.42E+05	4.89E-06	2.01E+01	6.39E+01	1.53E+01	2.91E-17
Samarium (62)	Sm-140	2.46E+04	2.82E-05	3.19E+01	8.98E+01	2.35E+01	2.60E-16
Samarium (62)	Sm-141	3.57E+04	1.94E-05	1.02E+03	8.85E+01	8.15E+01	6.24E-16
Samarium (62)	Sm-141m	1.61E+04	4.30E-05	6.96E+02	7.11E+01	6.45E+01	1.10E-15
Samarium (62)	Sm-142	5.02E+03	1.38E-04	4.92E+02	2.05E+02	1.44E+02	7.92E-15
Samarium (62)	Sm-143	4.16E+04	1.66E-05	1.33E+01	2.41E+02	1.26E+01	8.43E-17
Samarium (62)	Sm-143m	3.31E+05	2.09E-06	1.33E+01	1.31E+02	1.21E+01	1.01E-17
Samarium (62)	Sm-145	7.44E-01	9.32E-01	3.66E+00	5.02E+03	3.66E+00	1.38E-12
Samarium (62)	Sm-146	6.73E-09	1.03E+08	1.63E-03		1.63E-03	6.88E-08
Samarium (62)	Sm-147	6.54E-12	1.06E+11	1.79E-03		1.79E-03	7.80E-05
Samarium (62)	Sm-148	9.90E-17	7.00E+15	1.06E-03		1.06E-03	3.08E+00
Samarium (62)	Sm-151	7.70E-03	9.00E+01	4.43E+00	3.37E+08	4.43E+00	1.69E-10
Samarium (62)	Sm-153	1.31E+02	5.31E-03	5.52E+01	4.21E+03	5.45E+01	1.24E-13
Samarium (62)	Sm-155	1.63E+04	4.24E-05	6.68E+00	1.35E+03	6.65E+00	1.22E-16
Samarium (62)	Sm-156	6.46E+02	1.07E-03	9.31E+00	1.39E+02	8.72E+00	4.09E-15
Samarium (62)	Sm-157	4.54E+04	1.53E-05	1.15E+02	2.84E+02	8.18E+01	5.49E-16
Tin (50)	Sn-106	1.90E+05	3.65E-06		4.73E+01	4.73E+01	5.12E-17
Tin (50)	Sn-108	3.54E+04	1.96E-05	7.36E+02	5.43E+01	5.05E+01	2.99E-16
Tin (50)	Sn-109	2.02E+04	3.42E-05	6.27E+00	6.31E+01	5.70E+00	5.96E-17
Tin (50)	Sn-110	1.48E+03	4.69E-04	1.65E+02	1.05E+02	6.44E+01	9.30E-15
Tin (50)	Sn-111	1.03E+04	6.72E-05	1.44E+02	2.29E+02	8.85E+01	1.85E-15
Tin (50)	Sn-113	2.20E+00	3.15E-01	9.77E+00	7.67E+02	9.65E+00	9.63E-13
Tin (50)	Sn-113m	1.70E+04	4.07E-05	1.07E+01	8.34E+02	1.06E+01	1.36E-16
Tin (50)	Sn-117m	1.84E+01	3.77E-02	1.41E+01	1.46E+03	1.39E+01	1.72E-13

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Tin (50)	Sn-119m	8.63E-01	8.03E-01	1.15E+01	9.68E+04	1.15E+01	3.08E-12
Tin (50)	Sn-121	2.25E+02	3.09E-03	1.54E+02	2.24E+05	1.54E+02	1.60E-13
Tin (50)	Sn-121m	1.58E-02	4.39E+01	2.71E+00	1.06E+05	2.71E+00	4.03E-11
Tin (50)	Sn-123	1.96E+00	3.54E-01	3.07E+00	1.27E+04	3.07E+00	3.74E-13
Tin (50)	Sn-123m	9.09E+03	7.62E-05	1.31E+03	1.44E+03	6.86E+02	1.80E-14
Tin (50)	Sn-125	2.62E+01	2.64E-02	2.42E+00	2.52E+02	2.40E+00	2.22E-14
Tin (50)	Sn-125m	3.83E+04	1.81E-05	3.11E+00	2.55E+02	3.07E+00	1.95E-17
Tin (50)	Sn-126	3.01E-06	2.30E+05	2.62E-01	9.98E+01	2.61E-01	2.12E-08
Tin (50)	Sn-127	2.89E+03	2.40E-04	9.98E+00	7.32E+01	8.78E+00	7.49E-16
Tin (50)	Sn-127m	8.82E+04	7.86E-06	1.04E+01	1.53E+02	9.72E+00	2.71E-17
Tin (50)	Sn-128	6.17E+03	1.12E-04	2.90E+02	7.60E+01	6.02E+01	2.42E-15
Tin (50)	Sn-129	1.63E+05	4.24E-06	3.95E-01	7.49E+01	3.93E-01	6.03E-19
Tin (50)	Sn-130	9.79E+04	7.08E-06		5.33E+01	5.33E+01	1.37E-16
Tin (50)	Sn-130m	2.14E+05	3.23E-06	7.88E+02	4.71E+01	4.45E+01	5.24E-17
Strontium (38)	Sr-79	1.62E+05	4.28E-06	1.28E+03	6.86E+01	6.51E+01	6.16E-17
Strontium (38)	Sr-80	3.43E+03	2.02E-04	2.28E+02	1.20E+02	7.86E+01	3.56E-15
Strontium (38)	Sr-81	1.63E+04	4.24E-05	3.57E+02	9.87E+01	7.73E+01	7.44E-16
Strontium (38)	Sr-82	9.97E+00	6.95E-02	3.58E+00	1.75E+02	3.50E+00	5.59E-14
Strontium (38)	Sr-83	1.87E+02	3.70E-03	2.20E+01	1.52E+02	1.92E+01	1.65E-14
Strontium (38)	Sr-85	3.90E+00	1.78E-01	4.73E+01	4.08E+02	4.24E+01	1.79E-12
Strontium (38)	Sr-85m	5.39E+03	1.29E-04	5.43E+01	3.15E+02	4.63E+01	1.42E-15
Strontium (38)	Sr-87m	2.16E+03	3.21E-04	5.76E+02	6.33E+02	3.02E+02	2.36E-14
Strontium (38)	Sr-89	5.01E+00	1.38E-01	4.94E+00	2.03E+04	4.94E+00	1.70E-13
Strontium (38)	Sr-90	2.41E-02	2.88E+01	2.63E-01	1.00E+04	2.63E-01	1.91E-12
Strontium (38)	Sr-91	6.30E+02	1.10E-03	4.19E+00	1.88E+02	4.10E+00	1.15E-15
Strontium (38)	Sr-92	2.28E+03	3.04E-04	9.00E+01	1.16E+02	5.06E+01	3.96E-15
Strontium (38)	Sr-93	4.91E+04	1.41E-05	1.78E+00	7.93E+01	1.74E+00	6.39E-18
Strontium (38)	Sr-94	2.90E+05	2.39E-06	1.33E+03	8.32E+01	7.83E+01	4.92E-17
Tantalum (73)	Ta-170	5.39E+04	1.29E-05	3.97E+01	4.65E+01	2.14E+01	1.31E-16
Tantalum (73)	Ta-172	9.90E+03	7.00E-05	1.50E+00	5.23E+01	1.46E+00	4.92E-17
Tantalum (73)	Ta-173	1.93E+03	3.58E-04	1.03E+01	1.85E+02	9.78E+00	1.70E-15
Tantalum (73)	Ta-174	5.33E+03	1.30E-04	8.23E-03	2.00E+02	8.23E-03	5.22E-19
Tantalum (73)	Ta-175	5.78E+02	1.20E-03	2.52E+01	1.36E+02	2.13E+01	1.25E-14
Tantalum (73)	Ta-176	7.50E+02	9.24E-04	1.81E+02	8.35E+01	5.71E+01	2.60E-14
Tantalum (73)	Ta-177	1.07E+02	6.46E-03	3.58E+02	4.12E+03	3.29E+02	1.05E-12
Tantalum (73)	Ta-178	3.91E+04	1.77E-05		1.89E+03	1.89E+03	1.67E-14
Tantalum (73)	Ta-178m	2.57E+03	2.69E-04	4.87E+02	1.82E+02	1.32E+02	1.78E-14
Tantalum (73)	Ta-179	3.81E-01	1.82E+00	7.99E+01	1.28E+04	7.94E+01	7.24E-11
Tantalum (73)	Ta-180	7.45E+02	9.31E-04	8.64E+02	6.29E+03	7.60E+02	3.56E-13
Tantalum (73)	Ta-182	2.21E+00	3.14E-01	3.83E+00	1.49E+02	3.73E+00	5.96E-13
Tantalum (73)	Ta-182m	2.30E+04	3.01E-05	3.82E+00	1.27E+02	3.71E+00	5.69E-17
Tantalum (73)	Ta-183	4.96E+01	1.40E-02	1.75E+01	7.44E+02	1.71E+01	1.22E-13
Tantalum (73)	Ta-184	6.98E+02	9.93E-04	8.55E+01	1.26E+02	5.10E+01	2.61E-14
Tantalum (73)	Ta-185	7.37E+03	9.40E-05	1.02E+01	1.32E+03	1.01E+01	4.90E-16
Tantalum (73)	Ta-186	3.47E+04	2.00E-05	2.04E+03	1.39E+02	1.30E+02	1.35E-15
Terbium (65)	Tb-146	9.50E+05	7.29E-07	1.63E-03	3.04E+01	1.63E-03	4.87E-22
Terbium (65)	Tb-147	3.70E+03	1.87E-04	1.79E-03	4.82E+01	1.79E-03	1.38E-19

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Terbium (65)	Tb-147m	1.95E+05	3.56E-06	1.79E-03	5.12E+01	1.79E-03	2.62E-21
Terbium (65)	Tb-148	6.07E+03	1.14E-04	6.58E-03	8.05E+01	6.58E-03	3.11E-19
Terbium (65)	Tb-148m	1.66E+05	4.19E-06	6.58E-03	6.29E+01	6.58E-03	1.14E-20
Terbium (65)	Tb-149	1.47E+03	4.70E-04	5.29E+00	9.56E+01	5.01E+00	9.84E-16
Terbium (65)	Tb-149m	8.76E+04	7.91E-06	2.83E+01	1.03E+02	2.22E+01	7.34E-17
Terbium (65)	Tb-150	1.74E+03	3.97E-04	1.35E-03	7.63E+01	1.35E-03	2.25E-19
Terbium (65)	Tb-150m	6.28E+04	1.10E-05	1.35E-03	7.97E+01	1.35E-03	6.24E-21
Terbium (65)	Tb-151	3.45E+02	2.01E-03	1.11E+01	1.96E+02	1.05E+01	8.94E-15
Terbium (65)	Tb-151m	8.74E+05	7.93E-07	1.16E+01	1.95E+02	1.10E+01	3.68E-18
Terbium (65)	Tb-152	3.47E+02	2.00E-03	7.13E-04	1.28E+02	7.13E-04	6.06E-19
Terbium (65)	Tb-152m	8.67E+04	7.99E-06	7.13E-04	1.02E+02	7.13E-04	2.42E-21
Terbium (65)	Tb-153	1.08E+02	6.41E-03	1.50E+01	5.38E+02	1.46E+01	4.00E-14
Terbium (65)	Tb-154	2.82E+02	2.45E-03	1.01E+02	8.05E+01	4.49E+01	4.75E-14
Terbium (65)	Tb-155	4.75E+01	1.46E-02	1.25E+02	1.42E+03	1.15E+02	7.25E-13
Terbium (65)	Tb-156	4.73E+01	1.47E-02	3.03E+01	1.01E+02	2.33E+01	1.49E-13
Terbium (65)	Tb-156m	2.49E+02	2.79E-03	2.61E+01	9.97E+01	2.07E+01	2.51E-14
Terbium (65)	Tb-156n	1.15E+03	6.05E-04	2.78E+01	1.01E+02	2.18E+01	5.76E-15
Terbium (65)	Tb-157	9.76E-03	7.10E+01	1.28E+01	9.09E+04	1.28E+01	3.98E-10
Terbium (65)	Tb-158	3.85E-03	1.80E+02	3.97E-01	2.47E+02	3.96E-01	3.15E-11
Terbium (65)	Tb-160	3.50E+00	1.98E-01	4.76E+00	1.72E+02	4.63E+00	4.11E-13
Terbium (65)	Tb-161	3.66E+01	1.89E-02	2.74E+01	9.77E+03	2.74E+01	2.33E-13
Terbium (65)	Tb-162	4.79E+04	1.45E-05		1.77E+02	1.77E+02	1.16E-15
Terbium (65)	Tb-163	1.87E+04	3.71E-05	2.15E+03	2.54E+02	2.28E+02	3.85E-15
Terbium (65)	Tb-164	1.21E+05	5.71E-06		7.83E+01	7.83E+01	2.05E-16
Terbium (65)	Tb-165	1.73E+05	4.01E-06	5.92E+02	2.11E+02	1.55E+02	2.88E-16
Technetium (43)	Tc-101	2.57E+04	2.70E-05	3.03E+03	5.88E+02	4.92E+02	3.76E-15
Technetium (43)	Tc-102	4.14E+06	1.67E-07		1.53E+03	1.53E+03	7.30E-17
Technetium (43)	Tc-102m	8.37E+04	8.28E-06		7.56E+01	7.56E+01	1.79E-16
Technetium (43)	Tc-104	1.99E+04	3.48E-05	1.23E+03	8.12E+01	7.62E+01	7.72E-16
Technetium (43)	Tc-105	4.79E+04	1.45E-05	6.88E+01	1.19E+02	4.36E+01	1.85E-16
Technetium (43)	Tc-91	1.16E+05	5.97E-06	2.17E+01	5.40E+01	1.55E+01	2.36E-17
Technetium (43)	Tc-91m	1.10E+05	6.28E-06	1.04E+01	5.84E+01	8.84E+00	1.41E-17
Technetium (43)	Tc-92	8.57E+04	8.09E-06		4.99E+01	4.99E+01	1.04E-16
Technetium (43)	Tc-93	2.21E+03	3.14E-04	1.03E+01	1.20E+02	9.44E+00	7.72E-16
Technetium (43)	Tc-93m	8.37E+03	8.28E-05	1.02E+01	8.61E+01	9.14E+00	1.97E-16
Technetium (43)	Tc-94	1.24E+03	5.57E-04	2.80E+02	7.38E+01	5.84E+01	8.57E-15
Technetium (43)	Tc-94m	7.00E+03	9.89E-05	7.78E+02	9.80E+01	8.71E+01	2.27E-15
Technetium (43)	Tc-95	3.04E+02	2.28E-03	3.28E+02	2.49E+02	1.41E+02	8.59E-14
Technetium (43)	Tc-95m	4.15E+00	1.67E-01	3.20E+01	2.79E+02	2.87E+01	1.27E-12
Technetium (43)	Tc-96	5.91E+01	1.17E-02	5.14E+01	7.83E+01	3.10E+01	9.78E-14
Technetium (43)	Tc-96m	7.07E+03	9.80E-05	5.19E+01	7.86E+01	3.12E+01	8.23E-16
Technetium (43)	Tc-97	2.67E-07	2.60E+06	2.30E+01	4.04E+05	2.30E+01	1.62E-05
Technetium (43)	Tc-97m	2.81E+00	2.47E-01	6.75E+00	1.52E+05	6.75E+00	4.53E-13
Technetium (43)	Tc-98	1.65E-07	4.20E+06	9.76E-01	1.39E+02	9.69E-01	1.12E-06
Technetium (43)	Tc-99	3.28E-06	2.11E+05	3.07E+00	3.10E+05	3.07E+00	1.80E-07
Technetium (43)	Tc-99m	1.01E+03	6.87E-04	3.07E+00	1.69E+03	3.06E+00	5.83E-16
Tellurium (52)	Te-113	2.14E+05	3.23E-06	9.97E+00	5.15E+01	8.35E+00	8.55E-18

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Tellurium (52)	Te-114	2.40E+04	2.89E-05	1.14E+03	4.80E+01	4.60E+01	4.25E-16
Tellurium (52)	Te-115	6.28E+04	1.10E-05	2.68E+03	6.19E+01	6.05E+01	2.15E-16
Tellurium (52)	Te-115m	5.44E+04	1.27E-05	2.68E+03	5.53E+01	5.42E+01	2.23E-16
Tellurium (52)	Te-116	2.44E+03	2.84E-04	2.60E+02	8.00E+01	6.12E+01	5.65E-15
Tellurium (52)	Te-117	5.87E+03	1.18E-04	7.99E+02	1.12E+02	9.82E+01	3.80E-15
Tellurium (52)	Te-118	4.22E+01	1.64E-02	1.48E+01	2.44E+02	1.39E+01	7.57E-14
Tellurium (52)	Te-119	3.78E+02	1.83E-03	2.43E+02	2.59E+02	1.25E+02	7.65E-14
Tellurium (52)	Te-119m	5.38E+01	1.29E-02	5.60E+01	1.28E+02	3.89E+01	1.67E-13
Tellurium (52)	Te-121	1.32E+01	5.25E-02	6.68E+01	3.56E+02	5.62E+01	1.00E-12
Tellurium (52)	Te-121m	1.64E+00	4.22E-01	6.30E+00	2.86E+02	6.16E+00	8.81E-13
Tellurium (52)	Te-123	1.16E-15	6.00E+14	1.11E+01	3.40E+07	1.11E+01	2.29E+03
Tellurium (52)	Te-123m	2.12E+00	3.27E-01	4.60E+00	1.54E+03	4.59E+00	5.16E-13
Tellurium (52)	Te-125m	4.41E+00	1.57E-01	9.67E+00	2.66E+04	9.67E+00	5.32E-13
Tellurium (52)	Te-127	6.49E+02	1.07E-03	2.63E+02	2.67E+04	2.60E+02	9.88E-14
Tellurium (52)	Te-127m	2.32E+00	2.99E-01	3.98E+00	2.03E+04	3.98E+00	4.23E-13
Tellurium (52)	Te-129	5.23E+03	1.32E-04	4.04E-01	2.73E+03	4.04E-01	1.93E-17
Tellurium (52)	Te-129m	7.53E+00	9.21E-02	3.74E-01	2.39E+03	3.74E-01	1.24E-14
Tellurium (52)	Te-131	1.46E+04	4.76E-05	1.67E+00	2.47E+02	1.65E+00	2.89E-17
Tellurium (52)	Te-131m	2.02E+02	3.42E-03	1.49E+00	1.01E+02	1.47E+00	1.85E-15
Tellurium (52)	Te-132	7.89E+01	8.78E-03	6.24E+00	7.88E+01	5.78E+00	1.87E-14
Tellurium (52)	Te-133	2.91E+04	2.38E-05	7.86E+00	1.04E+02	7.31E+00	6.47E-17
Tellurium (52)	Te-133m	6.57E+03	1.05E-04	7.56E+00	7.11E+01	6.83E+00	2.68E-16
Tellurium (52)	Te-134	8.71E+03	7.95E-05	1.68E+02	5.59E+01	4.20E+01	1.25E-15
Thorium (90)	Th-223	3.64E+07	1.90E-08		8.49E+02	8.49E+02	1.01E-17
Thorium (90)	Th-224	2.08E+07	3.33E-08		7.56E+03	7.56E+03	1.58E-16
Thorium (90)	Th-226	1.19E+04	5.82E-05	3.99E-03	8.36E+03	3.99E-03	1.47E-19
Thorium (90)	Th-227	1.35E+01	5.12E-02	2.12E-03	4.63E+02	2.12E-03	6.89E-17
Thorium (90)	Th-228	3.63E-01	1.91E+00	9.23E-04	1.24E+02	9.23E-04	1.13E-15
Thorium (90)	Th-229	9.44E-05	7.34E+03	4.68E-04	6.58E+02	4.68E-04	2.20E-12
Thorium (90)	Th-230	9.19E-06	7.54E+04	3.49E-04	1.08E+02	3.49E-04	1.69E-11
Thorium (90)	Th-231	2.38E+02	2.91E-03	1.38E-04	4.22E+02	1.38E-04	2.60E-19
Thorium (90)	Th-232	4.93E-11	1.41E+10	4.85E-04	7.95E+01	4.85E-04	4.43E-06
Thorium (90)	Th-233	1.63E+04	4.24E-05	4.22E-04	3.63E+02	4.22E-04	1.17E-20
Thorium (90)	Th-234	1.05E+01	6.60E-02	3.22E-04	1.05E+02	3.22E-04	1.40E-17
Thorium (90)	Th-235	5.13E+04	1.35E-05	1.34E-04	2.85E+02	1.34E-04	1.19E-21
Thorium (90)	Th-236	9.71E+03	7.13E-05	4.39E-04	5.67E+01	4.39E-04	2.07E-20
Titanium (22)	Ti-44	1.16E-02	6.00E+01	3.27E-01	8.62E+01	3.26E-01	2.41E-12
Titanium (22)	Ti-45	1.97E+03	3.52E-04	3.93E+02	2.29E+02	1.45E+02	6.41E-15
Titanium (22)	Ti-51	6.32E+04	1.10E-05		5.22E+02	5.22E+02	8.17E-16
Titanium (22)	Ti-52	2.14E+05	3.23E-06		1.17E+02	1.17E+02	5.52E-17
Thallium (81)	Tl-190	1.40E+05	4.95E-06	4.32E-03	4.88E+01	4.32E-03	1.14E-20
Thallium (81)	Tl-190m	9.84E+04	7.04E-06	4.32E-03	3.80E+01	4.32E-03	1.62E-20
Thallium (81)	Tl-194	1.10E+04	6.28E-05	1.75E+00	1.00E+02	1.72E+00	5.87E-17
Thallium (81)	Tl-194m	1.11E+04	6.24E-05	1.75E+00	5.54E+01	1.70E+00	5.75E-17
Thallium (81)	Tl-195	5.23E+03	1.32E-04	1.18E+01	1.31E+02	1.08E+01	7.84E-16
Thallium (81)	Tl-196	3.30E+03	2.10E-04	9.28E+02	1.01E+02	9.15E+01	1.05E-14
Thallium (81)	Tl-197	2.14E+03	3.24E-04	8.55E+00	3.95E+02	8.37E+00	1.50E-15

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Thallium (81)	TI-198	1.15E+03	6.05E-04	4.78E+02	9.40E+01	7.86E+01	2.64E-14
Thallium (81)	TI-198m	3.25E+03	2.13E-04	3.55E+02	9.18E+01	7.29E+01	8.63E-15
Thallium (81)	TI-199	8.18E+02	8.47E-04	7.51E+02	8.67E+02	4.02E+02	1.90E-13
Thallium (81)	TI-200	2.33E+02	2.98E-03	2.04E+02	1.49E+02	8.62E+01	1.44E-13
Thallium (81)	TI-201	8.33E+01	8.32E-03	1.98E+02	2.74E+03	1.85E+02	8.66E-13
Thallium (81)	TI-202	2.07E+01	3.35E-02	9.50E+01	4.49E+02	7.84E+01	1.49E-12
Thallium (81)	TI-204	1.83E-01	3.78E+00	2.13E+00	5.10E+04	2.13E+00	4.59E-12
Thallium (81)	TI-206	8.67E+04	7.99E-06		2.25E+04	2.25E+04	1.04E-13
Thallium (81)	TI-206m	9.74E+04	7.12E-06		8.16E+01	8.16E+01	3.35E-16
Thallium (81)	TI-207	7.64E+04	9.08E-06		1.94E+04	1.94E+04	1.02E-13
Thallium (81)	TI-208	1.19E+05	5.81E-06		5.32E+01	5.32E+01	1.80E-16
Thallium (81)	TI-209	1.69E+05	4.11E-06	6.25E+02	8.75E+01	7.67E+01	1.85E-16
Thallium (81)	TI-210	2.80E+05	2.47E-06	4.02E-03	6.75E+01	4.02E-03	5.84E-21
Thulium (69)	Tm-161	1.21E+04	5.75E-05	4.20E+02	8.52E+01	7.08E+01	1.83E-15
Thulium (69)	Tm-162	1.68E+04	4.13E-05	1.82E+03	9.77E+01	9.27E+01	1.74E-15
Thulium (69)	Tm-163	3.35E+03	2.07E-04	1.33E+02	1.46E+02	6.94E+01	6.55E-15
Thulium (69)	Tm-164	1.82E+05	3.81E-06		2.50E+02	2.50E+02	4.37E-16
Thulium (69)	Tm-165	2.02E+02	3.43E-03	1.53E+02	3.59E+02	1.07E+02	1.70E-13
Thulium (69)	Tm-166	7.88E+02	8.79E-04	2.00E+02	9.60E+01	6.49E+01	2.65E-14
Thulium (69)	Tm-167	2.73E+01	2.53E-02	2.97E+01	1.63E+03	2.91E+01	3.45E-13
Thulium (69)	Tm-168	2.72E+00	2.55E-01	7.79E+00	1.62E+02	7.43E+00	8.92E-13
Thulium (69)	Tm-170	1.97E+00	3.52E-01	4.32E+00	2.75E+04	4.32E+00	7.24E-13
Thulium (69)	Tm-171	3.61E-01	1.92E+00	3.14E+01	5.25E+05	3.14E+01	2.89E-11
Thulium (69)	Tm-172	9.55E+01	7.26E-03	3.07E+01	3.90E+02	2.85E+01	9.96E-14
Thulium (69)	Tm-173	7.37E+02	9.41E-04	1.94E+02	5.19E+02	1.41E+02	6.43E-14
Thulium (69)	Tm-174	6.75E+04	1.03E-05		1.11E+02	1.11E+02	5.55E-16
Thulium (69)	Tm-175	2.40E+04	2.89E-05	5.23E+01	1.74E+02	4.02E+01	5.70E-16
Thulium (69)	Tm-176	1.97E+05	3.52E-06		9.51E+01	9.51E+01	1.65E-16
Uranium (92)	U-227	3.31E+05	2.09E-06		5.81E+02	5.81E+02	7.73E-16
Uranium (92)	U-228	4.00E+04	1.73E-05		6.81E+03	6.81E+03	7.53E-14
Uranium (92)	U-230	1.22E+01	5.70E-02	1.53E-03	8.02E+03	1.53E-03	5.61E-17
Uranium (92)	U-231	6.02E+01	1.15E-02	1.38E-04	3.82E+02	1.38E-04	1.03E-18
Uranium (92)	U-232	1.01E-02	6.89E+01	5.06E-04	1.24E+02	5.06E-04	2.27E-14
Uranium (92)	U-233	4.35E-06	1.59E+05	4.22E-04	6.58E+02	4.22E-04	4.38E-11
Uranium (92)	U-234	2.82E-06	2.46E+05	3.22E-04	1.08E+02	3.22E-04	5.19E-11
Uranium (92)	U-235	9.84E-10	7.04E+08	1.34E-04	3.19E+02	1.34E-04	6.21E-08
Uranium (92)	U-235m	1.40E+04	4.95E-05	1.34E-04	3.19E+02	1.34E-04	4.36E-21
Uranium (92)	U-236	2.96E-08	2.34E+07	4.39E-04	7.95E+01	4.39E-04	6.80E-09
Uranium (92)	U-237	3.75E+01	1.85E-02	3.76E-04	3.08E+02	3.76E-04	4.61E-18
Uranium (92)	U-238	1.55E-10	4.47E+09	3.03E-04	1.05E+02	3.03E-04	9.02E-07
Uranium (92)	U-239	1.55E+04	4.46E-05	9.77E-05	2.38E+02	9.77E-05	2.92E-21
Uranium (92)	U-240	4.31E+02	1.61E-03	1.98E-04	7.01E+01	1.98E-04	2.14E-19
Uranium (92)	U-242	2.17E+04	3.20E-05	1.68E-04	8.93E+01	1.68E-04	3.65E-21
Vanadium (23)	V-47	1.12E+04	6.20E-05	1.19E+03	1.98E+02	1.70E+02	1.39E-15
Vanadium (23)	V-48	1.58E+01	4.38E-02	1.41E+01	6.57E+01	1.16E+01	6.83E-14
Vanadium (23)	V-49	7.67E-01	9.04E-01	5.47E+02		5.47E+02	6.79E-11
Vanadium (23)	V-50	4.62E-18	1.50E+17	6.52E-01	1.30E+02	6.49E-01	1.36E+04

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Vanadium (23)	V-52	9.73E+04	7.12E-06		1.27E+02	1.27E+02	1.31E-16
Vanadium (23)	V-53	2.26E+05	3.06E-06		1.81E+02	1.81E+02	8.24E-17
Tungsten (74)	W-177	2.76E+03	2.51E-04	2.50E+02	2.12E+02	1.15E+02	1.43E-14
Tungsten (74)	W-178	1.17E+01	5.92E-02	4.70E+01	1.73E+03	4.57E+01	1.35E-12
Tungsten (74)	W-179	9.83E+03	7.05E-05	7.97E+01	4.16E+03	7.82E+01	2.76E-15
Tungsten (74)	W-179m	5.69E+04	1.22E-05	7.97E+01	2.16E+03	7.68E+01	4.69E-16
Tungsten (74)	W-181	2.09E+00	3.32E-01	1.34E+02	7.77E+03	1.32E+02	2.22E-11
Tungsten (74)	W-185	3.37E+00	2.06E-01	1.03E+01	1.80E+05	1.03E+01	1.10E-12
Tungsten (74)	W-185m	2.28E+05	3.04E-06	1.03E+01	9.09E+03	1.03E+01	1.62E-17
Tungsten (74)	W-187	2.56E+02	2.71E-03	8.30E+01	4.47E+02	7.00E+01	9.92E-14
Tungsten (74)	W-188	3.62E+00	1.91E-01	2.44E+00	2.63E+03	2.44E+00	2.45E-13
Tungsten (74)	W-190	1.21E+04	5.71E-05	5.11E+02	1.35E+02	1.07E+02	3.24E-15
Xenon (54)	Xe-120	9.11E+03	7.61E-05	1.35E+02	6.18E+01	4.24E+01	1.08E-15
Xenon (54)	Xe-121	9.08E+03	7.63E-05	5.69E+01	8.01E+01	3.33E+01	8.60E-16
Xenon (54)	Xe-122	3.02E+02	2.29E-03		1.94E+02	1.94E+02	1.52E-13
Xenon (54)	Xe-123	2.92E+03	2.37E-04	1.03E+01	2.55E+02	9.95E+00	8.13E-16
Xenon (54)	Xe-125	3.59E+02	1.93E-03	2.64E+00	7.99E+02	2.64E+00	1.78E-15
Xenon (54)	Xe-127	6.95E+00	9.97E-02		7.90E+02	7.90E+02	2.80E-11
Xenon (54)	Xe-127m	3.16E+05	2.19E-06		5.00E+02	5.00E+02	3.90E-16
Xenon (54)	Xe-129m	2.85E+01	2.43E-02		9.73E+03	9.73E+03	8.55E-11
Xenon (54)	Xe-131m	2.14E+01	3.24E-02		2.50E+04	2.50E+04	2.98E-10
Xenon (54)	Xe-133	4.82E+01	1.44E-02		6.52E+03	6.52E+03	3.49E-11
Xenon (54)	Xe-133m	1.16E+02	6.00E-03		3.36E+03	3.36E+03	7.50E-12
Xenon (54)	Xe-135	6.64E+02	1.04E-03	3.49E+00	8.10E+02	3.48E+00	1.37E-15
Xenon (54)	Xe-135m	2.38E+04	2.91E-05	3.49E+00	2.99E+02	3.45E+00	3.79E-17
Xenon (54)	Xe-137	9.54E+04	7.26E-06	1.05E+00	2.49E+02	1.04E+00	2.90E-18
Xenon (54)	Xe-138	2.59E+04	2.68E-05	8.08E+02	5.26E+01	4.94E+01	5.11E-16
Yttrium (39)	Y-81	3.10E+05	2.23E-06	3.57E+02	6.20E+01	5.28E+01	2.68E-17
Yttrium (39)	Y-83	5.14E+04	1.35E-05	2.20E+01	7.43E+01	1.69E+01	5.31E-17
Yttrium (39)	Y-83m	1.28E+05	5.42E-06	2.20E+01	7.38E+01	1.69E+01	2.13E-17
Yttrium (39)	Y-84m	9.22E+03	7.52E-05	5.82E+02	4.85E+01	4.48E+01	7.92E-16
Yttrium (39)	Y-85	2.27E+03	3.06E-04	4.74E+01	1.16E+02	3.37E+01	2.45E-15
Yttrium (39)	Y-85m	1.25E+03	5.55E-04	3.89E+01	1.06E+02	2.85E+01	3.76E-15
Yttrium (39)	Y-86	4.12E+02	1.68E-03	7.67E+01	5.32E+01	3.14E+01	1.27E-14
Yttrium (39)	Y-86m	7.59E+03	9.13E-05	7.28E+01	5.06E+01	2.99E+01	6.57E-16
Yttrium (39)	Y-87	7.61E+01	9.11E-03	8.08E+01	2.67E+02	6.20E+01	1.38E-13
Yttrium (39)	Y-87m	4.54E+02	1.53E-03	6.26E+01	1.92E+02	4.72E+01	1.76E-14
Yttrium (39)	Y-88	2.37E+00	2.92E-01	6.33E+00	6.87E+01	5.80E+00	4.17E-13
Yttrium (39)	Y-89m	1.40E+06	4.97E-07		2.15E+02	2.15E+02	2.66E-17
Yttrium (39)	Y-90	9.47E+01	7.32E-03	2.46E+01	1.13E+04	2.46E+01	4.54E-14
Yttrium (39)	Y-90m	1.90E+03	3.64E-04	2.31E+01	3.10E+02	2.15E+01	1.97E-15
Yttrium (39)	Y-91	4.32E+00	1.60E-01	4.40E+00	1.49E+04	4.40E+00	1.80E-13
Yttrium (39)	Y-91m	7.33E+03	9.46E-05	4.40E+00	3.69E+02	4.34E+00	1.05E-16
Yttrium (39)	Y-92	1.71E+03	4.04E-04	2.03E+02	6.77E+02	1.56E+02	1.63E-14
Yttrium (39)	Y-93	5.96E+02	1.16E-03	1.78E+00	1.59E+03	1.77E+00	5.37E-16
Yttrium (39)	Y-94	1.95E+04	3.56E-05	1.33E+03	2.34E+02	1.99E+02	1.86E-15
Yttrium (39)	Y-95	3.54E+04	1.96E-05	5.17E+00	7.13E+01	4.82E+00	2.51E-17

Resident Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Ytterbium (70)	Yb-162	1.93E+04	3.59E-05	9.72E+02	8.81E+01	8.08E+01	1.32E-15
Ytterbium (70)	Yb-163	3.30E+04	2.10E-05	1.29E+02	9.48E+01	5.46E+01	5.24E-16
Ytterbium (70)	Yb-164	4.81E+03	1.44E-04	8.22E+02	2.39E+02	1.85E+02	1.23E-14
Ytterbium (70)	Yb-165	3.68E+04	1.88E-05	1.53E+02	2.31E+02	9.22E+01	8.03E-16
Ytterbium (70)	Yb-166	1.07E+02	6.47E-03	3.94E+01	9.36E+01	2.77E+01	8.34E-14
Ytterbium (70)	Yb-167	2.08E+04	3.33E-05	2.95E+01	5.94E+02	2.81E+01	4.38E-16
Ytterbium (70)	Yb-169	7.90E+00	8.77E-02	1.16E+01	7.51E+02	1.14E+01	4.74E-13
Ytterbium (70)	Yb-175	6.04E+01	1.15E-02	5.38E+01	5.16E+03	5.32E+01	2.99E-13
Ytterbium (70)	Yb-177	3.18E+03	2.18E-04	3.11E+01	8.42E+02	3.00E+01	3.24E-15
Ytterbium (70)	Yb-178	4.92E+03	1.41E-04	3.77E+02	1.09E+03	2.80E+02	1.96E-14
Ytterbium (70)	Yb-179	4.55E+04	1.52E-05	3.36E+02	1.96E+02	1.24E+02	9.43E-16
Zinc (30)	Zn-60	1.53E+05	4.53E-06	1.03E+03	3.47E+01	3.36E+01	2.56E-17
Zinc (30)	Zn-61	2.45E+05	2.83E-06	4.84E+02	8.17E+01	6.99E+01	3.37E-17
Zinc (30)	Zn-62	6.61E+02	1.05E-03	6.63E+01	1.37E+02	4.46E+01	8.13E-15
Zinc (30)	Zn-63	9.47E+03	7.32E-05	9.85E+02	1.79E+02	1.51E+02	1.96E-15
Zinc (30)	Zn-65	1.04E+00	6.69E-01	1.70E+01	3.28E+02	1.62E+01	1.97E-12
Zinc (30)	Zn-69	6.46E+03	1.07E-04	1.35E+03	4.47E+04	1.31E+03	2.73E-14
Zinc (30)	Zn-69m	4.41E+02	1.57E-03	1.23E+02	4.80E+02	9.78E+01	2.97E-14
Zinc (30)	Zn-71	1.49E+05	4.66E-06		5.88E+02	5.88E+02	5.45E-16
Zinc (30)	Zn-71m	1.53E+03	4.52E-04	2.23E+02	1.27E+02	8.08E+01	7.26E-15
Zinc (30)	Zn-72	1.31E+02	5.31E-03	1.96E+01	6.51E+01	1.51E+01	1.61E-14
Zirconium (40)	Zr-85	4.63E+04	1.50E-05	3.91E+01	5.91E+01	2.35E+01	8.38E-17
Zirconium (40)	Zr-86	3.68E+02	1.88E-03	3.98E+01	4.96E+01	2.21E+01	1.00E-14
Zirconium (40)	Zr-87	3.61E+03	1.92E-04	5.42E+01	1.01E+02	3.52E+01	1.65E-15
Zirconium (40)	Zr-88	3.03E+00	2.28E-01	4.01E+00	6.08E+01	3.76E+00	2.12E-13
Zirconium (40)	Zr-89	7.74E+01	8.95E-03	6.74E+01	1.69E+02	4.82E+01	1.07E-13
Zirconium (40)	Zr-89m	8.75E+04	7.92E-06	7.19E+01	1.14E+02	4.41E+01	8.70E-17
Zirconium (40)	Zr-93	4.53E-07	1.53E+06	1.81E+00	3.01E+06	1.81E+00	7.23E-07
Zirconium (40)	Zr-95	3.95E+00	1.75E-01	5.18E+00	1.31E+02	4.98E+00	2.33E-13
Zirconium (40)	Zr-97	3.63E+02	1.91E-03	3.57E+01	1.26E+02	2.78E+01	1.44E-14

Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)														
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	Plane BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	External Exposure Dose (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)	Plane External Exposure (yrs)	BDCC DL=1 (mg/cm ²)
Actinium (89)	Ac-223	1.73E+05	4.00E-06	8.17E+18	9.43E+18	3.36E+18	1.18E+19	2.06E+19	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.04E+04	2.35E+04	8.39E+03	2.96E+04	5.13E+04
Actinium (89)	Ac-224	2.18E+03	3.17E-04	4.67E+01	1.18E+02	3.18E+01	2.77E+01	3.47E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.29E-12	2.34E-11	6.33E-12	5.52E-12	6.91E-11
Actinium (89)	Ac-225	2.53E+01	2.74E-02	1.13E+01	2.28E+01	7.04E+00	7.30E+00	5.97E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.96E-10	3.94E-10	1.22E-10	1.26E-10	1.03E-09
Actinium (89)	Ac-226	2.07E+02	3.35E-03	1.33E+02	1.67E+02	5.37E+01	1.51E+02	5.71E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.82E-10	3.55E-10	1.14E-10	3.21E-10	1.21E-09
Actinium (89)	Ac-227	3.18E+02	2.18E+01	1.91E-01	2.48E-01	8.23E-02	2.95E-01	1.09E+00	2.93E-01	2.91E-01	2.90E-01	3.02E-01	2.99E-01	2.64E-09	3.43E-09	1.14E-09	4.08E-09	1.51E-08
Actinium (89)	Ac-228	9.87E+02	7.02E-04	2.92E+01	6.27E+01	1.73E+01	2.17E+01	2.14E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.11E-11	2.81E-11	7.76E-12	9.72E-12	9.59E-11
Actinium (89)	Ac-230	1.79E+05	3.87E-06	6.49E+08	1.89E+09	4.70E+08	3.77E+08	5.18E+09	8.94E+03	8.94E+03	8.94E+03	8.94E+03	8.94E+03	1.62E-06	4.70E-06	1.17E-06	9.38E-07	1.29E-05
Actinium (89)	Ac-231	4.86E+04	1.43E-05	2.28E+05	1.98E+05	7.36E+04	6.77E+05	9.20E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.10E-09	1.83E-09	6.79E-10	6.24E-09	8.49E-09
Actinium (89)	Ac-232	1.84E+05	3.77E-06	5.93E+13	1.46E+14	3.91E+13	3.81E+13	4.57E+14	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.45E-01	3.57E-01	9.57E-02	9.33E-02	1.12E+00
Actinium (89)	Ac-233	1.51E+05	4.60E-06	2.78E+04	3.88E+04	1.15E+04	4.29E+04	1.74E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.33E-11	1.17E-10	3.44E-11	1.29E-10	5.22E-10
Silver (47)	Ag-100m	1.63E+05	4.26E-06	1.46E+03	3.11E+03	7.13E+02	9.44E+02	1.10E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.74E-12	3.71E-12	8.50E-13	1.13E-12	1.32E-11
Silver (47)	Ag-101	3.28E+04	2.11E-05	1.66E+03	3.32E+03	6.11E+02	2.95E+03	1.50E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.89E-12	1.98E-11	3.65E-12	1.76E-11	8.97E-11
Silver (47)	Ag-102	2.82E+04	2.45E-05	9.39E+10	2.40E+11	5.58E+10	4.90E+10	7.11E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.58E-04	1.68E-03	3.91E-04	3.44E-04	4.98E-03
Silver (47)	Ag-102m	4.73E+04	1.46E-05	1.32E+11	3.37E+11	7.83E+10	6.89E+10	9.98E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.52E-04	1.41E-03	3.28E-04	2.88E-04	4.18E-03
Silver (47)	Ag-103	5.54E+03	1.25E-04	4.74E+02	4.86E+02	1.12E+02	2.60E+02	1.63E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.88E-12	1.75E-11	4.05E-12	9.38E-12	5.89E-11
Silver (47)	Ag-104	5.26E+03	1.32E-04	4.47E+01	9.08E+01	2.02E+01	2.41E+01	3.03E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.71E-12	3.48E-12	7.73E-13	9.25E-13	1.16E-11
Silver (47)	Ag-104m	1.09E+04	6.37E-05	3.30E+02	6.88E+02	1.58E+02	1.68E+02	2.22E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.13E-12	1.28E-11	2.94E-12	3.11E-12	4.12E-11
Silver (47)	Ag-105	6.13E+00	1.13E-01	4.06E-01	7.91E-01	1.70E-01	4.17E-01	2.84E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.35E-11	2.63E-11	5.65E-12	1.39E-11	9.43E-11
Silver (47)	Ag-105m	5.04E+04	1.38E-05	3.35E+03	6.53E+03	1.40E+03	3.44E+03	2.34E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.35E-11	2.64E-11	5.67E-12	1.39E-11	9.46E-11
Silver (47)	Ag-106	1.52E+04	4.56E-05	1.07E+09	2.50E+09	4.68E+08	1.71E+09	1.04E+10	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.44E-05	3.38E-05	6.33E-06	2.32E-05	1.41E-04
Silver (47)	Ag-106m	3.05E+01	2.27E-02	2.09E-01	4.26E-01	9.80E-02	1.11E-01	1.39E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.41E-12	2.87E-12	6.60E-13	7.47E-13	9.34E-12
Silver (47)	Ag-108	1.54E+05	4.51E-06	8.24E+19	1.29E+20	3.25E+19	6.31E+19	1.50E+20	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.12E+05	1.76E+05	4.43E+04	8.60E+04	2.05E+05
Silver (47)	Ag-108m	1.66E+03	4.18E-02	1.53E-02	2.98E-02	6.76E-03	7.89E-03	1.00E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.94E-09	3.77E-09	8.54E-10	9.98E-10	1.26E-08
Silver (47)	Ag-109m	5.52E+05	1.26E-06	6.10E+22	6.97E+22	1.74E+22	1.57E+23	1.66E+23	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.34E+07	2.67E+07	6.67E+06	6.00E+07	6.37E+07
Silver (47)	Ag-110	8.88E+05	7.80E-07	6.59E+23	1.44E+24	4.23E+23	3.54E+23	1.57E+24	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.58E+08	3.45E+08	1.02E+08	8.51E+07	3.78E+08
Silver (47)	Ag-110m	1.01E+00	6.84E-01	1.19E-02	3.72E-02	8.43E-03	6.81E-03	1.08E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.50E-12	7.83E-12	1.78E-12	1.43E-12	2.27E-11
Silver (47)	Ag-111	3.40E+01	2.04E-02	1.25E+03	3.31E+03	8.89E+02	8.17E+02	3.81E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.90E-09	2.10E-08	5.64E-09	5.18E-09	2.42E-08
Silver (47)	Ag-111m	3.37E+05	2.05E-06	1.25E+07	3.31E+07	8.90E+06	8.18E+06	3.81E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.96E-09	2.11E-08	5.68E-09	5.22E-09	2.44E-08
Silver (47)	Ag-112	1.94E+03	3.57E-04	2.30E+02	7.86E+02	1.85E+02	1.28E+02	1.94E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.57E-11	8.81E-11	2.07E-11	1.43E-11	2.18E-10
Silver (47)	Ag-113	1.13E+03	6.13E-04	6.15E+03	1.60E+04	4.31E+03	4.07E+03	1.92E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.19E-09	3.10E-09	8.36E-10	7.90E-10	3.73E-09
Silver (47)	Ag-113m	3.18E+05	2.18E-06	2.69E+06	7.00E+06	1.89E+06	1.78E+06	8.42E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.86E-09	4.83E-09	1.30E-09	1.23E-09	5.80E-09
Silver (47)	Ag-114	4.75E+06	1.46E-07	8.74E+26	2.38E+27	6.60E+26	4.30E+26	4.73E+27	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.07E+10	1.11E+11	3.07E+10	2.00E+10	2.20E+11
Silver (47)	Ag-115	1.82E+04	3.81E-05	6.32E+03	1.45E+04	2.92E+03	5.33E+03	4.56E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.74E-11	1.78E-10	3.58E-11	6.53E-11	5.59E-10
Silver (47)	Ag-116	1.36E+05	5.10E-06	3.96E+15	1.26E+16	3.19E+15	2.16E+15	3.31E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.57E+00	2.09E+01	5.28E+00	3.57E+00	5.49E+01
Silver (47)	Ag-117	2.97E+05	2.33E-06	8.85E+03	2.34E+04	5.76E+03	5.33E+03	5.99E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.77E-12	1.79E-11	4.40E-12	4.08E-12	4.58E-11
Silver (47)	Ag-99	1.76E+05	3.93E-06	1.05E+04	2.10E+04	4.17E+03	1.00E+04	7.81E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.14E-11	2.29E-11	4.54E-12	1.09E-11	8.52E-11
Aluminum (13)	Al-26	9.67E-07	7.17E+05	2.24E-02	8.90E-02	2.17E-02	1.87E-02	2.24E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.17E-06	4.64E-06	1.14E-06	9.76E-07	1.17E-05
Aluminum (13)	Al-28	1.63E+05	4.26E-06	5.11E+16	2.14E+17	5.24E+16	4.52E+16	5.16E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.71E+01	7.15E+01	1.75E+01	1.51E+01	1.72E+02
Aluminum (13)	Al-29	5.55E+04	1.25E-05	4.16E+13	1.09E+14	2.58E+13	1.98E+13	3.17E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.21E-02	1.10E-01	2.62E-02	2.00E-02	3.21E-01
Americium (95)	Am-237	4.99E+03	1.39E-04	3.99E+02	5.79E+02	1.58E+02	5.05E+02	2.19E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.67E-11	5.34E-11	1.46E-11	4.66E-11	2.02E-10
Americium (95)	Am-238	3.72E+03	1.86E-04	1.13E+02	2.00E+02	5.35E+01	1.24E+02	7.53E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.41E-11	2.48E-11	6.65E-12	1.54E-11	9.36E-11
Americium (95)	Am-239	5.10E+02	1.36E-03	5.88E+01	7.00E+01	2.03E+01	1.04E+02	2.98E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.34E-11	6.36E-11	1.85E-11	9.48E-11	2.71E-10
Americium (95)	Am-240	1.20E+02	5.80E-03	2.57E+00	4.52E+00	1.19E+00	3.39E+00	1.89E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-11	1.76E-11	4.63E-12	1.32E-11	7.35E-11
Americium (95)	Am-241	1.60E-03	4.32E+02	2.33E+01	1.51E+01	4.19E+00	2.27E+01	1.67E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.79E-06	4.41E-06	1.22E-06	6.61E-06	4.86E-06
Americium (95)	Am-242	3.79E+02	1.83E-03	3.68E+03	3.84E+03	1.10E+03	9.44E+03	1.69E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.56E-09	4.76E-09	1.37E-09	1.17E-08	2.09E-08
Americium (95)	Am-242m	4.91E+03	1.41E+02	6.56E+00	7.88E+00	2.22E+00	1.23E+01	3.31E+01	3.55E-02	3.34E-02	3.29E-02	3.91E-02	6.39E-02	6.27E-07	7.52E-07	2.12E-07	1.18E-06	3.16E-06
Americium (95)	Am-243	9.40E-05	7.37E+03	2.16E-01	2.60E-01	7.56E-02	3.37E-01	1.00E+00	8.47E-02	8.45E-02	8.46E-02	8.47E-02	8.41E-02	1.08E-06	1.30E-06	3.79E-07	1.69E-06	5.03E-06
Americium (95)	Am-244	6.01E+02	1.15E-03	1.58E+01	2.82E+01	6.75E+00	2.27E+01	1.35E+02	1.00E-08	1.00E-08	1.00E-08	1.0						

Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)															
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	
				BDCC	1cm BDCC	5cm BDCC	15cm BDCC	Plane	Start Time	Start Time	Start Time	Start Time	External	External	External	External	BDCC	1cm BDCC	5cm BDCC
				DL=1	DL=1	DL=1	DL=1	BDCC	External	External	External	External	External	DL=1	DL=1	DL=1	DL=1	BDCC	DL=1
				(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)	DL=1	(yrs)	(yrs)	(yrs)	(yrs)	(yrs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/cm ²)	(mg/cm ²)
Arsenic (33)	As-78	4.02E+03	1.73E-04	1.44E+02	4.65E+02	1.09E+02	7.76E+01	1.24E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.43E-12	1.75E-11	4.11E-12	2.92E-12	4.68E-11	
Arsenic (33)	As-79	4.04E+04	1.71E-05	2.45E+15	1.93E+15	8.67E+14	5.64E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.29E+00	7.31E+00	3.29E+00	1.39E+01	3.66E+01	
Astatine (85)	At-204	3.96E+04	1.75E-05	1.68E+02	2.93E+02	8.96E+01	1.22E+02	9.55E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.68E-12	2.93E-12	8.96E-13	1.21E-12	9.55E-12	
Astatine (85)	At-205	1.39E+04	4.98E-05	1.36E+02	2.23E+02	6.70E+01	9.63E+01	7.12E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.89E-12	6.37E-12	1.92E-12	2.76E-12	2.04E-11	
Astatine (85)	At-206	1.19E+04	5.82E-05	4.61E+01	8.24E+01	2.46E+01	3.02E+01	2.61E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.55E-12	2.77E-12	8.25E-13	1.02E-12	8.77E-12	
Astatine (85)	At-207	3.37E+03	2.05E-04	2.62E+01	4.40E+01	1.32E+01	1.70E+01	1.38E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.12E-12	5.25E-12	1.57E-12	2.03E-12	1.65E-11	
Astatine (85)	At-208	3.72E+03	1.86E-04	1.75E+01	3.57E+01	9.86E+00	1.09E+01	1.08E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.90E-12	3.87E-12	1.07E-12	1.18E-12	1.17E-11	
Astatine (85)	At-209	1.12E+03	6.18E-04	8.89E+00	1.40E+01	4.16E+00	5.20E+00	4.40E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.21E-12	5.08E-12	1.50E-12	1.88E-12	1.59E-11	
Astatine (85)	At-210	7.49E+02	9.25E-04	4.99E+00	8.52E+00	2.51E+00	3.28E+00	2.80E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.72E-12	4.63E-12	1.37E-12	1.78E-12	1.52E-11	
Astatine (85)	At-211	8.42E+02	8.24E-04	1.28E+03	1.67E+03	5.83E+02	9.57E+02	5.82E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.24E-10	8.14E-10	2.84E-10	4.65E-10	2.83E-09	
Astatine (85)	At-215	2.19E+11	3.17E-12	1.25E+25	2.48E+25	7.62E+24	8.19E+24	3.51E+25	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.39E+04	4.74E+04	1.46E+04	1.56E+04	6.70E+04	
Astatine (85)	At-216	7.28E+10	9.51E-12	7.05E+10	2.19E+11	5.49E+10	3.87E+10	6.04E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.06E-10	1.26E-09	3.16E-10	2.23E-10	3.47E-09	
Astatine (85)	At-217	6.77E+08	1.02E-09	8.77E+10	1.87E+11	5.70E+10	5.45E+10	4.63E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.46E-08	1.16E-07	3.55E-08	3.39E-08	2.88E-07	
Astatine (85)	At-218	1.46E+07	4.76E-08																
Astatine (85)	At-219	3.90E+05	1.78E-06																
Astatine (85)	At-220	9.82E+04	7.06E-06	2.37E+03	6.99E+03	1.79E+03	1.31E+03	1.95E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.03E-11	3.04E-11	7.80E-12	5.71E-12	8.47E-11	
Gold (79)	Au-186	3.40E+04	2.04E-05	4.73E+02	6.80E+02	2.09E+02	3.25E+02	2.21E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.01E-12	7.21E-12	2.21E-12	3.45E-12	2.34E-11	
Gold (79)	Au-187	4.34E+04	1.60E-05	1.68E+03	1.65E+03	6.49E+02	1.68E+03	6.45E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.40E-11	1.38E-11	5.43E-12	1.40E-11	5.40E-11	
Gold (79)	Au-190	8.51E+03	8.14E-05	9.28E+01	1.99E+02	5.51E+01	6.82E+01	5.59E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.02E-12	8.61E-12	2.39E-12	2.95E-12	2.42E-11	
Gold (79)	Au-191	1.91E+03	3.63E-04	8.32E+01	8.44E+01	3.23E+01	6.90E+01	3.11E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.61E-11	1.64E-11	6.28E-12	1.34E-11	6.03E-11	
Gold (79)	Au-192	1.23E+03	5.64E-04	1.82E+01	3.67E+01	1.02E+01	1.36E+01	1.03E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.51E-12	1.11E-11	3.10E-12	4.12E-12	3.12E-11	
Gold (79)	Au-193	3.44E+02	2.01E-03	1.42E+02	1.11E+02	4.74E+01	1.66E+02	4.14E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.54E-10	1.20E-10	5.17E-11	1.80E-10	4.51E-10	
Gold (79)	Au-193m	5.60E+06	1.24E-07	2.31E+06	1.80E+06	7.73E+05	2.70E+06	6.75E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.54E-10	1.21E-10	5.17E-11	1.81E-10	4.51E-10	
Gold (79)	Au-194	1.60E+02	4.34E-03	5.70E+00	9.40E+00	2.89E+00	4.43E+00	2.83E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.34E-11	2.21E-11	6.81E-12	1.05E-11	6.68E-11	
Gold (79)	Au-195	1.36E+00	5.10E-01	2.20E+00	1.14E+00	5.78E-01	3.52E+00	4.83E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.12E-10	3.16E-10	1.61E-10	9.81E-10	1.35E-09	
Gold (79)	Au-195m	7.17E+05	9.67E-07	1.16E+06	5.99E+05	3.05E+05	1.86E+06	2.55E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.12E-10	3.16E-10	1.61E-10	9.81E-10	1.35E-09	
Gold (79)	Au-196	4.09E+01	1.69E-02	4.01E+00	5.63E+00	1.84E+00	2.99E+00	1.64E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.73E-11	5.24E-11	1.71E-11	2.78E-11	1.53E-10	
Gold (79)	Au-196m	6.32E+02	1.10E-03	3.61E+01	3.80E+01	1.43E+01	3.36E+01	1.43E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.17E-11	2.29E-11	8.61E-12	2.02E-11	8.62E-11	
Gold (79)	Au-198	9.39E+01	7.38E-03	2.07E+01	4.91E+01	1.38E+01	1.06E+01	1.22E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.46E-11	2.01E-10	5.67E-11	4.34E-11	4.98E-10	
Gold (79)	Au-198m	1.11E+02	6.22E-03	4.97E+00	5.54E+00	1.83E+00	3.80E+00	1.77E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.71E-11	1.91E-11	6.29E-12	1.31E-11	6.12E-11	
Gold (79)	Au-199	8.06E+01	8.60E-03	1.21E+02	1.01E+02	4.19E+01	8.53E+01	3.98E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.78E-10	4.83E-10	2.01E-10	4.09E-10	1.90E-09	
Gold (79)	Au-200	7.53E+03	9.21E-05	6.03E+03	1.46E+04	3.93E+03	3.14E+03	3.14E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.11E-10	7.54E-10	2.03E-10	1.62E-10	1.62E-09	
Gold (79)	Au-200m	3.25E+02	2.13E-03	2.74E+00	6.34E+00	1.72E+00	1.60E+00	1.69E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.27E-12	7.58E-12	2.06E-12	1.92E-12	2.02E-11	
Gold (79)	Au-201	1.40E+04	4.95E-05	2.84E+10	2.92E+10	1.18E+10	2.60E+10	7.58E+10	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.91E-04	8.13E-04	3.29E-04	7.25E-04	2.11E-03	
Gold (79)	Au-202	7.59E+05	9.13E-07	2.75E+22	6.66E+22	1.92E+22	1.45E+22	1.23E+23	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.42E+07	3.44E+07	9.92E+06	7.48E+06	6.35E+07	
Barium (56)	Ba-124	3.31E+04	2.09E-05	2.26E+12	5.57E+12	1.12E+12	2.56E+12	1.60E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.64E-02	4.05E-02	8.17E-03	1.86E-02	1.16E-01	
Barium (56)	Ba-126	3.64E+03	1.90E-04	1.27E+02	3.00E+02	6.27E+01	1.17E+02	8.99E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.51E-12	2.02E-11	4.21E-12	7.85E-12	6.04E-11	
Barium (56)	Ba-127	2.87E+04	2.42E-05	1.44E+03	3.22E+03	6.60E+02	1.88E+03	1.00E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.24E-11	2.76E-11	5.67E-12	1.61E-11	8.61E-11	
Barium (56)	Ba-128	1.04E+02	6.66E-03	1.04E+01	2.60E+01	5.40E+00	1.19E+01	8.03E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.49E-11	6.21E-11	1.29E-11	2.84E-11	1.92E-10	
Barium (56)	Ba-129	2.72E+03	2.55E-04	1.64E+02	4.46E+02	8.45E+01	3.57E+02	1.48E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.51E-11	4.10E-11	7.77E-12	3.28E-11	1.37E-10	
Barium (56)	Ba-129m	2.81E+03	2.47E-04	3.43E+01	7.80E+01	1.62E+01	2.96E+01	2.35E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.06E-12	6.94E-12	1.45E-12	2.64E-12	2.10E-11	
Barium (56)	Ba-131	2.20E+01	3.15E-02	1.32E+00	2.99E+00	6.20E-01	1.58E+00	9.11E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.52E-11	3.46E-11	7.17E-12	1.83E-11	1.05E-10	
Barium (56)	Ba-131m	2.49E+04	2.78E-05	1.49E+03	3.39E+03	7.03E+02	1.80E+03	1.03E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.52E-11	3.46E-11	7.16E-12	1.83E-11	1.05E-10	
Barium (56)	Ba-133	6.59E-02	1.05E+01	6.56E-02	1.50E-01	3.07E-02	9.88E-02	4.37E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.57E-10	5.88E-10	1.20E-10	3.87E-10	1.71E-09	

Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)															
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	BDCC DL=1 (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)	BDCC DL=1 (mg/cm ²)		
Bismuth (83)	Bi-213	7.99E+03	8.67E-05	3.82E+03	8.15E+03	2.48E+03	2.37E+03	2.01E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.98E-10	4.22E-10	1.28E-10	1.23E-10	1.04E-09	
Bismuth (83)	Bi-214	1.83E+04	3.79E-05	1.42E+08	5.45E+07	3.87E+07	3.63E+08	2.34E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.22E-06	1.24E-06	8.78E-07	8.23E-06	5.30E-06	
Bismuth (83)	Bi-215	4.79E+04	1.45E-05	2.71E+05	5.47E+05	1.62E+05	1.59E+05	1.11E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.36E-09	4.76E-09	1.41E-09	1.39E-09	9.68E-09	
Bismuth (83)	Bi-216	1.68E+05	4.13E-06	4.05E+03	1.20E+04	3.07E+03	2.25E+03	3.33E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.01E-11	2.99E-11	7.66E-12	5.61E-12	8.32E-11	
Berkelium (97)	Bk-245	5.12E+01	1.35E-02	7.93E+00	1.02E+01	2.72E+00	1.13E+01	3.78E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.36E-11	9.48E-11	2.52E-11	1.05E-10	3.51E-10	
Berkelium (97)	Bk-246	1.41E+02	4.93E-03	3.77E+00	6.61E+00	1.65E+00	4.99E+00	2.80E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.42E-11	2.24E-11	5.62E-12	1.70E-11	9.51E-11	
Berkelium (97)	Bk-247	5.02E+04	1.38E+03	6.73E-01	8.04E-01	2.49E-01	6.01E-01	2.40E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.42E-07	7.68E-07	2.37E-07	5.74E-07	2.29E-06	
Berkelium (97)	Bk-248m	2.56E+02	2.71E-03	5.16E+02	7.31E+02	1.86E+02	1.03E+03	2.87E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.70E-10	1.37E-09	3.50E-10	1.94E-09	5.40E-09	
Berkelium (97)	Bk-249	7.67E-01	9.04E-01	8.35E+01	1.41E+02	3.72E+01	6.23E+01	4.85E+02	7.39E+00	7.41E+00	7.40E+00	7.38E+00	7.40E+00	5.26E-08	8.90E-08	2.35E-08	3.93E-08	3.06E-07	
Berkelium (97)	Bk-250	1.89E+03	3.67E-04	1.24E+02	2.48E+02	6.15E+01	9.74E+01	9.09E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.17E-11	6.35E-11	1.58E-11	2.50E-11	2.33E-10	
Berkelium (97)	Bk-251	6.55E+03	1.06E-04	4.81E+03	5.63E+03	1.51E+03	9.09E+03	1.95E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.57E-10	4.18E-10	1.12E-10	6.76E-10	1.45E-09	
Bromine (35)	Br-72	2.78E+05	2.49E-06	1.20E+04	2.37E+04	6.09E+03	6.54E+03	7.45E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.03E-12	1.19E-11	3.06E-12	3.29E-12	3.74E-11	
Bromine (35)	Br-73	1.07E+05	6.47E-06	6.03E+03	8.01E+03	2.73E+03	4.78E+03	2.53E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.98E-12	1.06E-11	3.61E-12	6.33E-12	3.35E-11	
Bromine (35)	Br-74	1.43E+04	4.83E-05	1.93E+07	6.11E+07	1.46E+07	1.14E+07	1.74E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.93E-07	6.12E-07	1.47E-07	1.14E-07	1.74E-06	
Bromine (35)	Br-74m	7.92E+03	8.75E-05	4.49E+01	1.42E+02	3.36E+01	2.56E+01	4.16E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.14E-13	2.58E-12	6.10E-13	4.64E-13	7.54E-12	
Bromine (35)	Br-75	3.77E+03	1.84E-04	1.23E+02	1.88E+02	6.33E+01	9.05E+01	6.40E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.73E-12	7.26E-12	2.45E-12	3.50E-12	2.47E-11	
Bromine (35)	Br-76	3.75E+02	1.85E-03	4.88E+00	1.06E+01	2.95E+00	2.61E+00	3.47E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.92E-12	4.16E-12	1.16E-12	1.03E-12	1.37E-11	
Bromine (35)	Br-76m	1.67E+07	4.15E-08	2.18E+05	4.73E+05	1.32E+05	1.17E+05	1.55E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.93E-12	4.18E-12	1.16E-12	1.03E-12	1.37E-11	
Bromine (35)	Br-77	1.06E+02	6.51E-03	1.43E+01	1.69E+01	6.55E+00	1.66E+01	9.98E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.01E-11	2.37E-11	9.20E-12	2.33E-11	1.40E-10	
Bromine (35)	Br-77m	8.51E+04	8.14E-06	1.14E+04	1.35E+04	5.23E+03	1.32E+04	7.97E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.01E-11	2.36E-11	9.19E-12	2.32E-11	1.40E-10	
Bromine (35)	Br-78	5.64E+04	1.23E-05	3.11E+14	4.88E+14	1.67E+14	1.76E+14	1.94E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.36E-01	1.31E+00	4.48E-01	4.73E-01	5.22E+00	
Bromine (35)	Br-80	2.06E+04	3.36E-05	1.03E+13	1.24E+13	5.03E+12	6.04E+12	3.25E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.75E-02	9.38E-02	3.79E-02	4.55E-02	2.45E-01	
Bromine (35)	Br-80m	1.37E+03	5.05E-04	6.76E+03	5.04E+03	2.91E+03	5.44E+03	1.44E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.64E-10	5.70E-10	3.29E-10	6.15E-10	1.63E-09	
Bromine (35)	Br-82	1.72E+02	4.03E-03	1.44E+00	4.16E+00	9.74E-01	7.39E-01	1.19E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.33E-12	3.85E-12	9.01E-13	6.84E-13	1.11E-11	
Bromine (35)	Br-82m	5.94E+04	1.17E-05	5.08E+02	1.47E+03	3.44E+02	2.61E+02	4.22E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.36E-12	3.93E-12	9.20E-13	6.99E-13	1.13E-11	
Bromine (35)	Br-83	2.53E+03	2.74E-04	1.67E+06	3.94E+06	1.31E+06	9.20E+05	2.67E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.06E-07	2.51E-07	8.32E-08	5.86E-08	1.70E-07	
Bromine (35)	Br-84	1.15E+04	6.05E-05	4.27E+02	1.33E+03	3.13E+02	2.60E+02	3.57E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.08E-12	1.89E-11	4.45E-12	3.70E-12	5.07E-11	
Bromine (35)	Br-84m	6.07E+04	1.14E-05	2.77E+13	7.65E+13	1.94E+13	1.56E+13	2.05E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.43E-02	2.05E-01	5.20E-02	4.18E-02	5.51E-01	
Bromine (35)	Br-85	1.26E+05	5.52E-06	9.57E+04	1.53E+05	4.26E+04	4.81E+04	3.29E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.26E-10	1.75E-10	5.60E-11	6.31E-11	4.32E-10	
Carbon (6)	C-10	1.14E+06	6.11E-07	4.07E+21	1.18E+22	2.67E+21	2.10E+21	3.32E+22	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.96E+04	2.02E+05	4.57E+04	3.60E+04	5.67E+05	
Carbon (6)	C-11	1.79E+04	3.88E-05																
Carbon (6)	C-14	1.22E-04	5.70E+03																
Calcium (20)	Ca-41	6.79E-06	1.02E+05																
Calcium (20)	Ca-45	1.55E+00	4.46E-01	4.44E+09	1.54E+09	9.94E+08	7.63E+09	8.26E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.49E-01	8.64E-02	5.58E-02	4.28E-01	4.64E-01	
Calcium (20)	Ca-47	5.58E+01	1.24E-02	4.42E+00	1.08E+01	2.64E+00	2.08E+00	3.25E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.23E-12	1.77E-11	4.32E-12	3.41E-12	5.32E-11	
Calcium (20)	Ca-49	4.18E+04	1.66E-05	7.53E+08	9.98E+08	4.83E+08	5.64E+08	3.92E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.71E-06	2.27E-06	1.10E-06	1.28E-06	8.93E-07	
Cadmium (48)	Cd-101	2.68E+05	2.59E-06	1.33E+04	2.66E+04	4.90E+03	2.37E+04	1.21E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.73E-12	1.95E-11	3.59E-12	1.74E-11	8.84E-11	
Cadmium (48)	Cd-102	6.62E+04	1.05E-05	1.09E+11	2.77E+11	6.45E+10	5.68E+10	8.22E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.25E-04	8.29E-04	1.93E-04	1.70E-04	2.46E-03	
Cadmium (48)	Cd-103	4.99E+04	1.39E-05	2.46E+03	4.37E+03	1.01E+03	2.34E+03	1.47E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.86E-12	1.75E-11	4.05E-12	9.38E-12	5.89E-11	
Cadmium (48)	Cd-104	6.31E+03	1.10E-04	1.58E+02	3.24E+02	7.33E+01	9.17E+01	1.08E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.06E-12	1.04E-11	2.34E-12	2.93E-12	3.44E-11	
Cadmium (48)	Cd-105	6.56E+03	1.06E-04	1.47E+02	3.18E+02	6.79E+01	1.55E+02	1.21E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.57E-12	9.87E-12	2.11E-12	4.80E-12	3.75E-11	
Cadmium (48)	Cd-107	9.34E+02	7.42E-04	3.78E+03	6.12E+03	1.35E+03	1.09E+04	1.51E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.40E-10	1.36E-09	3.01E-10	2.42E-09	3.36E-09	
Cadmium (48)	Cd-109	5.48E-01	1.26E+00	1.95E+01	1.89E+01	5.45E+00	5.25E+01	3.10E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.52E-09	7.28E-09	2.10E-09	2.02E-08	1.20E-08	
Cadmium (48)	Cd-111m	7.51E+03	9.23E-05	1.54E+03	2.42E+03	5.82E+02	1.26E+03	7.76E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.42E-11	6.93E-11	1.67E-11	3.62E-11	2.23E-10	
Cadmium (48)	Cd-113	9.00E-17	7.70E+15																
Cadmium (48)	Cd-113m	4.91E-02	1.41E+01	3.67E+05	5.14E+05	1.18E+05	8.06E+05	3.28E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.64E-03	2.29E-03	5.27E-04	3.60E-03	1.46E-03	
Cadmium (48)	Cd-115	1.14E+02	6.10E-03	3.71E+01	8.52E+01	1.72E+01	3.13E+01	2.68E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.29E-11	1.67E-10	3.37E-11	6.16E-11	5.27E-10	
Cadmium (48)	Cd-115m	5.67E+00	1.22E-01	3.33E+02	8.22E+02	2.17E+02	1.94E+02	9.18E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.31E-08	3.23E-08	8.56E-09	7.63E-09	3.61E-08	
Cadmium (48)	Cd-117	2.44E+03	2.84E-04	8.66E+01	2.21E+02	5.46E+01	5.29E+01	5.60E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.06E-12	2.06E-11	5.08E-12	4.93E-12	5.21E-11	
Cadmium (48)	Cd-117m	1.81E+03	3.84E-04	2.90E+01	8.43E+01	2.05E+01	1.69E+01	2.22E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.65E-1					

Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)														
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume BDCC DL=1 (pCi/g)	Soil Volume 1cm BDCC DL=1 (pCi/g)	Soil Volume 5cm BDCC DL=1 (pCi/g)	Soil Volume 15cm BDCC DL=1 (pCi/g)	Ground Plane BDCC DL=1 (pCi/cm ²)	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume BDCC DL=1 (mg/kg)	Soil Volume 1cm BDCC DL=1 (mg/kg)	Soil Volume 5cm BDCC DL=1 (mg/kg)	Soil Volume 15cm BDCC DL=1 (mg/kg)	Ground Plane BDCC DL=1 (mg/cm ²)
									Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)					
Californium (98)	Cf-246	1.70E+02	4.08E-03	7.78E+05	4.56E+05	2.31E+05	1.81E+06	5.13E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.18E-06	1.28E-06	6.49E-07	5.07E-06	1.44E-06
Californium (98)	Cf-247	1.95E+03	3.55E-04	8.02E+02	9.10E+02	2.48E+02	1.80E+03	4.38E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.97E-10	2.24E-10	6.08E-11	4.41E-10	1.08E-09
Californium (98)	Cf-248	7.57E-01	9.15E-01	1.12E+03	1.69E+03	4.72E+02	3.89E+03	5.07E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.14E-07	1.07E-06	3.00E-07	2.47E-06	3.22E-06
Californium (98)	Cf-249	1.97E-03	3.51E+02	2.12E-01	3.59E-01	9.46E-02	1.58E-01	1.23E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.19E-08	8.78E-08	2.31E-08	3.87E-08	3.01E-07
Californium (98)	Cf-250	5.30E-02	1.31E+01	3.62E+01	6.77E+01	1.63E+01	1.20E+02	4.35E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.32E-07	6.20E-07	1.50E-07	1.10E-06	3.98E-06
Californium (98)	Cf-251	7.70E-04	9.00E+02	4.64E-01	5.81E-01	1.54E-01	7.99E-01	2.35E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.94E-07	3.67E-07	9.74E-08	5.10E-07	1.49E-06
Californium (98)	Cf-252	2.62E-01	2.65E+00	3.63E-01	7.22E-01	1.83E-01	2.21E-01	2.26E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.78E-10	1.35E-09	3.41E-10	4.13E-10	4.22E-09
Californium (98)	Cf-253	1.42E+01	4.88E-02	1.55E+03	2.62E+03	6.90E+02	1.15E+03	6.65E+03	7.57E+00	7.59E+00	7.58E+00	7.56E+00	7.56E+00	5.35E-08	9.04E-08	2.38E-08	3.99E-08	2.30E-07
Californium (98)	Cf-254	4.18E+00	1.66E-01	1.11E-03	2.99E-03	7.32E-04	6.33E-04	7.64E-03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.30E-13	3.53E-13	8.62E-14	7.46E-14	9.01E-13
Californium (98)	Cf-255	4.29E+03	1.62E-04															
Chlorine (17)	Cl-34	1.43E+07	4.84E-08	1.13E+33	8.38E+32	3.71E+32	2.11E+33	7.30E+33	7.94E-06	6.31E-06	7.94E-06	6.31E-06	5.01E-06	5.22E+15	3.86E+15	1.71E+15	9.74E+15	3.36E+16
Chlorine (17)	Cl-34m	1.14E+04	6.09E-05	3.99E+02	1.11E+03	2.87E+02	2.56E+02	2.64E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.31E-12	6.45E-12	1.67E-12	1.48E-12	1.53E-11
Chlorine (17)	Cl-36	2.30E-06	3.01E+05	1.73E+05	7.48E+04	4.59E+04	3.05E+05	4.94E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.26E+00	2.27E+00	1.39E+00	9.25E+00	1.50E+00
Chlorine (17)	Cl-38	9.78E+03	7.09E-05	5.26E+02	2.24E+03	5.49E+02	4.50E+02	5.37E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.97E-12	1.69E-11	4.14E-12	3.39E-12	4.05E-11
Chlorine (17)	Cl-39	6.55E+03	1.06E-04	2.65E+02	6.15E+02	1.53E+02	1.35E+02	1.71E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.73E-12	7.10E-12	1.76E-12	1.55E-12	1.97E-11
Chlorine (17)	Cl-40	2.70E+05	2.57E-06	1.38E+17	4.84E+17	1.15E+17	9.09E+16	1.30E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.98E+01	1.39E+02	3.30E+01	2.62E+01	3.73E+02
Curium (96)	Cm-238	2.53E+03	2.74E-04	7.44E+01	1.29E+02	3.48E+01	8.32E+01	4.89E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.36E-11	2.36E-11	6.35E-12	1.52E-11	8.93E-11
Curium (96)	Cm-239	2.09E+03	3.31E-04	1.42E+02	1.75E+02	4.94E+01	2.06E+02	6.59E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.14E-11	3.87E-11	1.09E-11	4.57E-11	1.46E-10
Curium (96)	Cm-240	9.37E+00	7.40E-02	2.62E+01	7.75E+01	1.99E+01	1.46E+01	2.16E+02	1.72E+01	1.72E+01	1.72E+01	1.72E+01	1.72E+01	1.30E-09	3.85E-09	9.88E-10	7.24E-10	1.07E-08
Curium (96)	Cm-241	7.71E+00	8.99E-02	3.46E-01	5.20E-01	1.39E-01	4.52E-01	2.24E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.10E-11	3.15E-11	8.45E-12	7.47E-11	1.36E-10
Curium (96)	Cm-242	1.55E+00	4.46E-01	2.02E+04	8.33E+03	5.26E+03	1.65E+04	8.00E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.12E-06	2.52E-06	1.59E-06	4.99E-06	2.42E-06
Curium (96)	Cm-243	2.38E-02	2.91E+01	3.76E-01	4.64E-01	1.34E-01	6.68E-01	2.11E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.44E-09	9.19E-09	2.65E-09	1.32E-08	4.17E-08
Curium (96)	Cm-244	3.83E-02	1.81E+01	7.89E+03	5.03E+03	2.59E+03	2.65E+04	5.53E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.75E-05	6.22E-05	3.21E-05	3.28E-04	6.84E-05
Curium (96)	Cm-245	8.15E-05	8.50E+03	5.46E-01	6.02E-01	1.79E-01	1.04E+00	2.41E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.77E+02	3.18E-06	3.51E-06	1.05E-06	6.08E-06	1.41E-05
Curium (96)	Cm-246	1.46E-04	4.76E+03	8.51E+01	1.53E+02	4.00E+01	3.10E+02	1.00E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.79E-04	5.02E-04	1.31E-04	1.02E+03	3.29E-03
Curium (96)	Cm-247	4.44E-08	1.56E+07	1.33E-01	1.92E-01	5.62E-02	1.18E-01	6.64E-01	7.64E+04	7.92E+04	7.93E+04	6.97E+04	7.76E+04	1.43E-03	2.07E-03	6.06E-04	1.28E-03	7.16E-03
Curium (96)	Cm-248	1.99E-06	3.48E+05	4.12E-02	9.76E-02	2.45E-02	2.42E-02	2.72E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.96E-06	2.36E-05	5.93E-06	5.85E-06	6.58E-05
Curium (96)	Cm-249	5.68E+03	1.22E-04	8.89E+04	7.46E+04	3.11E+04	1.40E+05	3.61E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.56E-09	6.35E-09	2.64E-09	1.20E-08	3.07E-08
Curium (96)	Cm-250	8.35E-05	8.30E+03	4.16E-04	1.12E-03	2.74E-04	2.38E-04	2.86E-03	1.26E-01	1.43E-01	1.43E-01	1.13E-01	1.30E-01	2.42E-09	6.52E-09	1.59E-09	1.38E-09	1.66E-08
Curium (96)	Cm-251	2.17E+04	3.20E-05	1.59E+04	1.86E+04	4.98E+03	3.01E+04	6.47E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.57E-10	4.18E-10	1.12E-10	6.76E-10	1.45E-09
Cobalt (27)	Co-54m	2.46E+05	2.82E-06	2.30E+17	6.14E+17	1.58E+17	1.23E+17	1.68E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.79E+01	2.61E+02	6.71E+01	5.26E+01	7.16E+02
Cobalt (27)	Co-55	3.46E+02	2.00E-03	9.88E+00	2.37E+01	6.02E+00	5.68E+00	7.03E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.05E-12	7.30E-12	1.86E-12	1.75E-12	2.17E-11
Cobalt (27)	Co-56	3.28E+00	2.12E-01	2.66E-02	6.12E-02	1.53E-02	1.50E-02	2.01E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.83E-13	2.03E-12	5.08E-13	4.97E-13	6.66E-12
Cobalt (27)	Co-57	9.31E-01	7.44E-01	9.12E-01	7.08E-01	2.69E-01	1.03E+00	3.18E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.08E-10	8.42E-11	3.20E-11	1.22E-10	3.78E-10
Cobalt (27)	Co-58	3.57E+00	1.94E-01	2.82E-01	3.90E-01	1.14E-01	1.52E-01	1.58E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.88E-12	1.23E-11	3.59E-12	4.78E-12	4.97E-11
Cobalt (27)	Co-58m	6.72E+02	1.03E-03	5.30E+01	7.33E+01	2.14E+01	2.85E+01	2.96E+02	4.27E-05	4.24E-05	4.27E-05	4.28E-05	1.00E-08	8.88E-12	1.23E-11	3.59E-12	4.78E-12	4.97E-11
Cobalt (27)	Co-60	1.31E-01	5.27E+00	1.51E-02	4.23E-02	9.93E-03	7.98E-03	1.29E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.34E-11	3.74E-11	8.80E-12	7.07E-12	1.15E-10
Cobalt (27)	Co-60m	3.48E+04	1.99E-05	4.01E+03	1.12E+04	2.64E+03	2.12E+03	3.43E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.34E-11	3.75E-11	8.82E-12	7.08E-12	1.15E-10
Cobalt (27)	Co-61	3.68E+03	1.88E-04	6.29E+03	5.23E+03	2.37E+03	6.82E+03	1.03E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.02E-10	1.68E-10	7.62E-11	2.20E-10	3.31E-10
Cobalt (27)	Co-62	2.43E+05	2.85E-06	6.56E+17	1.92E+18	4.60E+17	3.66E+17	5.34E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.25E+02	9.53E+02	2.28E+02	1.81E+02	2.65E+03
Cobalt (27)	Co-62m	2.62E+04	2.65E-05	1.62E+11	4.76E+11	1.13E+11	9.04E+10	1.37E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.44E-04	2.18E-03	5.18E-04	4.15E-04	6.28E-03
Chromium (24)	Cr-48	2.82E+02	2.46E-03	2.81E+00	7.32E+00	1.81E+00	1.73E+00	2.18E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.28E-13	2.42E-12	5.98E-13	5.74E-13	7.20E-12
Chromium (24)	Cr-49	8.61E+03	8.05E-05	9.29E+02	1.44E+03	3.70E+02	7.27E+02	2.88E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.03E-11	1.59E-11	4.09E-12	8.03E-12	3.18E-11
Chromium (24)	Cr-51	9.13E+00	7.59E-02	6.99E+01	5.70E+01	2.37E+01	9.82E+01	4.27E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.58E-10	6.17E-10	2.56E-10	1.06E-09	4.63E-09
Chromium (24)	Cr-55	1.04E+05	6.65E-06	1.18E+21	1.20E+21	5.94E+20	7.17E+20	6.58E+20	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.21E+06	1.23E+06	6.08E+05	7.35E+05	6.74E+05
Chromium (24)	Cr-56	6.13E+04	1.13E-05	1.86E+03	5.50E+03	1.28E+03	1.13E+03	1.51E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.29E-12	9.74E-12	2.26E-12	2.00E-12	2.67E-11
Cesium (55)	Cs-121	1.41E+05	4.92E-06	2.17E+03	5.04E+03	1.04E+03	2.28E+03	1.66E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.62E-12	8.40E-12	1.73E-12	3.79E-12	2.76E-11
Cesium (55)	Cs-121m	1.79E+05	3.87E-06	6.52E+03	1.45E+04	2.89E+03	6.75E+03	5.09E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.55E-12	1.90E-11	3.78E-12	8.84E-12	6.67E-11
Cesium (55)	Cs-123	6.19E+04	1.12E-05															

Resident 3-D BDCCs October 2024																			
Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)													
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	BDCC DL=1 (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)	BDCC DL=1 (mg/cm ²)	
Cesium (55)	Cs-140	3.43E+05	2.02E-06	4.83E+03	1.52E+04	3.77E+03	3.29E+03	3.95E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.82E-12	1.20E-11	2.99E-12	2.61E-12	3.13E-11
Copper (29)	Cu-57	1.11E+08	6.22E-09	3.70E+06	6.15E+06	1.73E+06	2.08E+06	2.11E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.67E-12	6.11E-12	1.71E-12	2.07E-12	2.10E-11
Copper (29)	Cu-59	2.68E+05	2.58E-06	3.26E+14	2.51E+14	1.08E+14	6.08E+14	2.45E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.39E-01	1.07E-01	4.59E-02	2.60E-01	1.04E+00
Copper (29)	Cu-60	1.54E+04	4.51E-05	8.95E+07	2.37E+08	5.74E+07	4.88E+07	6.84E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.78E-07	1.79E-06	4.35E-07	3.70E-07	5.18E+00
Copper (29)	Cu-61	1.82E+03	3.80E-04	3.74E+02	3.90E+02	1.54E+02	2.36E+02	1.82E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.43E-11	2.53E-11	1.00E-11	1.53E-11	1.18E-10
Copper (29)	Cu-62	3.77E+04	1.84E-05	4.54E+14	3.84E+14	1.63E+14	5.40E+14	2.57E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.45E+00	1.23E+00	5.20E-01	1.73E+00	8.20E+00
Copper (29)	Cu-64	4.78E+02	1.45E-03	6.50E+02	5.05E+02	2.16E+02	1.21E+03	4.81E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.69E-10	1.31E-10	5.62E-11	3.15E-10	1.25E-09
Copper (29)	Cu-66	7.11E+04	9.74E-06	2.15E+16	6.20E+16	1.64E+16	1.53E+16	9.56E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.87E+01	1.12E+02	2.96E+01	2.75E+01	1.72E+02
Copper (29)	Cu-67	9.82E+01	7.06E-03	1.49E+02	1.75E+02	4.52E+01	9.83E+01	4.43E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.97E-10	2.32E-10	5.98E-11	1.30E-10	5.87E-10
Copper (29)	Cu-69	1.28E+05	5.42E-06	1.22E+12	1.69E+12	7.35E+11	8.00E+11	2.12E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.27E-03	1.78E-03	7.70E-04	8.38E-04	2.22E-04
Dysprosium (66)	Dy-148	1.10E+05	6.28E-06	1.90E+03	4.13E+03	8.82E+02	1.03E+03	1.15E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.95E-12	1.07E-11	2.29E-12	2.68E-12	2.99E-11
Dysprosium (66)	Dy-149	8.67E+04	7.99E-06	1.88E+03	4.11E+03	9.05E+02	1.64E+03	1.13E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.27E-12	1.37E-11	3.02E-12	5.48E-12	3.77E-11
Dysprosium (66)	Dy-150	5.08E+04	1.36E-05	5.48E+02	1.30E+03	2.66E+02	3.21E+02	3.65E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.14E-12	7.44E-12	1.52E-12	1.84E-12	2.09E-11
Dysprosium (66)	Dy-151	2.03E+04	3.41E-05	4.90E+02	9.70E+02	2.09E+02	3.78E+02	2.59E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.06E-12	1.40E-11	3.02E-12	5.44E-12	3.74E-11
Dysprosium (66)	Dy-152	2.55E+03	2.72E-04	5.11E+01	1.16E+02	2.43E+01	3.90E+01	3.05E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.91E-12	1.34E-11	2.81E-12	4.51E-12	3.53E-11
Dysprosium (66)	Dy-153	9.49E+02	7.31E-04	1.91E+01	3.68E+01	8.09E+00	2.24E+01	1.03E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.99E-12	1.15E-11	2.53E-12	7.01E-12	3.21E-11
Dysprosium (66)	Dy-154	2.31E-07	3.00E+06	2.86E+01	5.07E+01	1.10E+01	2.76E+01	1.36E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.40E-11	2.49E-11	5.41E-12	1.36E-11	6.66E-11
Dysprosium (66)	Dy-155	6.13E+02	1.13E-03	1.13E+02	1.13E+02	1.13E+02	1.13E+02	1.13E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.23E-11	7.48E-11	1.68E-11	4.07E-11	1.99E-10
Dysprosium (66)	Dy-157	7.46E+02	9.29E-04	1.04E+02	1.83E+02	4.10E+01	9.96E+01	4.87E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.23E-11	7.48E-11	1.68E-11	4.07E-11	1.99E-10
Dysprosium (66)	Dy-159	1.75E+00	3.96E-01	1.20E+01	7.67E+00	3.17E+00	2.35E+01	1.70E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.12E-09	1.35E-09	5.58E-10	4.14E-09	2.99E-09
Dysprosium (66)	Dy-165	2.60E+03	2.66E-04	6.02E+04	6.82E+04	1.76E+04	5.51E+04	7.66E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.42E-09	8.40E-09	2.17E-09	6.87E-09	9.43E-09
Dysprosium (66)	Dy-165m	2.90E+05	2.39E-06	6.81E+06	7.71E+06	1.99E+06	6.22E+06	8.66E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.52E-09	8.52E-09	2.20E-09	6.87E-09	9.57E-09
Dysprosium (66)	Dy-166	7.44E+01	9.32E-03	2.78E+02	2.00E+02	7.47E+01	3.83E+02	4.19E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.20E-09	8.65E-10	3.23E-10	1.66E-09	1.82E-09
Dysprosium (66)	Dy-167	5.87E+04	1.18E-05	1.11E+04	2.22E+04	5.59E+03	7.56E+03	5.37E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.12E-11	1.22E-10	3.08E-11	4.17E-11	2.96E-10
Dysprosium (66)	Dy-168	4.19E+04	1.66E-05	7.41E+12	1.31E+13	3.15E+12	4.11E+12	3.53E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.77E-02	1.02E-01	2.45E-02	3.20E-02	2.75E-01
Erbium (68)	Er-154	9.77E+04	7.10E-06	2.10E+05	4.97E+05	1.02E+05	1.23E+05	1.40E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.42E-10	1.52E-09	3.12E-10	3.76E-10	4.27E-09
Erbium (68)	Er-156	1.87E+04	3.71E-05	2.55E+02	4.55E+02	1.07E+02	1.62E+02	1.24E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.13E-12	7.38E-12	1.74E-12	2.62E-12	2.01E-11
Erbium (68)	Er-159	1.01E+04	6.85E-05	3.13E+02	4.63E+02	1.05E+02	2.16E+02	1.29E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.54E-12	1.41E-11	3.21E-12	6.60E-12	3.94E-11
Erbium (68)	Er-161	1.89E+03	3.66E-04	7.99E+01	1.16E+02	2.60E+01	5.57E+01	3.46E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.32E-11	1.92E-11	4.29E-12	9.20E-12	5.72E-11
Erbium (68)	Er-163	4.86E+03	1.43E-04	4.45E+04	2.44E+04	8.73E+03	5.40E+04	5.22E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.90E-09	1.59E-09	5.69E-10	3.52E-09	3.40E-09
Erbium (68)	Er-165	5.86E+02	1.18E-03	6.50E+03	3.27E+03	1.21E+03	7.81E+03	6.93E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.55E-09	1.78E-09	6.63E-10	4.27E-09	3.79E-09
Erbium (68)	Er-167m	9.63E+06	7.19E-08	2.44E+29	2.45E+29	6.72E+28	1.94E+29	7.57E+29	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.20E+12	8.25E+12	2.26E+12	6.53E+12	2.55E+13
Erbium (68)	Er-169	2.69E+01	2.58E-02	6.14E+06	2.38E+06	1.42E+07	1.04E+07	1.45E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.48E-05	2.90E-05	1.74E-05	1.27E-04	1.77E-04
Erbium (68)	Er-171	8.08E+02	8.58E-04	1.22E+02	1.89E+02	4.94E+01	9.28E+01	4.60E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.03E-11	7.76E-11	2.03E-11	3.81E-11	1.89E-10
Erbium (68)	Er-172	1.23E+02	5.63E-03	1.01E+01	1.45E+01	3.76E+00	6.19E+00	4.34E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.74E-11	3.92E-11	1.02E-11	1.68E-11	1.18E-10
Erbium (68)	Er-173	2.54E+05	2.73E-06	5.81E+04	1.17E+05	3.44E+04	3.04E+04	3.03E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.68E-11	1.55E-10	4.55E-11	4.02E-11	4.00E-10
Einsteinium (99)	Es-249	3.56E+03	1.94E-04	3.04E+02	4.70E+02	1.22E+02	3.48E+02	1.74E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.12E-11	6.37E-11	1.65E-11	4.72E-11	2.36E-10
Einsteinium (99)	Es-250	7.06E+02	9.82E-04	5.22E+00	8.86E+00	2.11E+00	8.88E+00	3.89E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.59E-12	6.09E-12	1.45E-12	6.10E-12	2.67E-11
Einsteinium (99)	Es-250m	2.73E+03	2.53E-04	1.67E+02	2.89E+02	7.24E+01	2.24E+02	1.13E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.97E-11	5.12E-11	1.28E-11	3.97E-11	2.00E-10
Einsteinium (99)	Es-251	1.84E+02	3.77E-03	9.12E+01	1.04E+02	2.80E+01	1.95E+02	4.74E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.42E-10	2.76E-10	7.40E-11	5.15E-10	1.25E-09
Einsteinium (99)	Es-253	1.24E+01	5.61E-02	1.35E+03	2.28E+03	6.00E+02	1.00E+03	7.82E+03	7.49E+00	7.51E+00	7.50E+00	7.49E+00	7.50E+00	5.35E-08	9.04E-08	2.38E-08	3.99E-08	3.11E-07	
Einsteinium (99)	Es-254	9.17E-01	7.55E-01	9.94E-02	1.98E-01	4.93E-02	7.86E-02	7.24E-01	2.68E-04	2.68E-04	2.68E-04	2.68E-04	2.68E-04	5.34E-11	1.06E-10	2.65E-11	4.22E-11	3.89E-10	
Einsteinium (99)	Es-254m	1.54E+02	4.49E-03	1.38E+01	2.75E+01	6.73E+00	9.56E+00	1.01E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.39E-11	8.77E-11	2.15E-11	3.05E-11	3.23E-10	
Einsteinium (99)	Es-255	6.36E+00	1.09E-01	4.64E+01	4.78E+01	1.40E+01	9.37E+01	1.40E+02	6.82E-07	7.05E-07	6.77E-07	6.78E-07	7.18E-07	3.61E-09	3.72E-09	1.09E-09	7.30E-09	1.09E-08	
Einsteinium (99)	Es-256	1.43E+04	4.83E-05	6.82E+00	1.84E+01	4.47E+00	3.89E+00	4.75E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.36E-13	6.38E-13	1.55E-13	1.35E-13	1.64E-12
Europium (63)	Eu-142	9.34E+06	7.42E-08	1.															

Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)														
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	Plane BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	External Exposure Plane (yrs)	BDCC DL=1 (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)	Plane BDCC DL=1 (mg/cm ²)
Hafnium (72)	Hf-182	7.70E-08	9.00E+06	2.70E-02	4.14E-02	1.14E-02	1.79E-02	1.22E-01	7.00E+00	7.00E+00	7.00E+00	7.00E+00	7.00E+00	1.24E-04	1.90E-04	5.22E-05	8.21E-05	5.59E-04
Hafnium (72)	Hf-182m	5.92E+03	1.17E-04	1.19E+02	1.77E+02	4.89E+01	8.30E+01	5.13E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.07E-12	1.05E-11	2.91E-12	4.95E-12	3.06E-11
Hafnium (72)	Hf-183	5.69E+03	1.22E-04	2.65E+02	3.47E+02	1.11E+02	1.87E+02	1.09E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.66E-11	2.17E-11	6.92E-12	1.17E-11	6.81E-11
Hafnium (72)	Hf-184	1.47E+03	4.70E-04	1.90E+01	3.18E+01	9.41E+00	1.26E+01	9.79E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.60E-12	7.71E-12	2.28E-12	3.06E-12	2.37E-11
Mercury (80)	Hg-190	1.82E+04	3.81E-05	1.98E+02	4.25E+02	1.18E+02	1.46E+02	1.20E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.02E-12	8.61E-12	2.39E-12	2.95E-12	2.42E-11
Mercury (80)	Hg-191m	7.17E+03	9.67E-05	7.95E+01	1.04E+02	3.57E+01	5.68E+01	3.62E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.11E-12	5.39E-12	1.85E-12	2.94E-12	1.87E-11
Mercury (80)	Hg-192	1.25E+03	5.54E-04	1.69E+01	3.08E+01	9.09E+00	1.30E+01	9.12E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.03E-12	9.16E-12	2.70E-12	3.87E-12	2.71E-11
Mercury (80)	Hg-193	1.60E+03	4.34E-04	5.72E+01	6.87E+01	2.59E+01	5.55E+01	2.64E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.34E-11	1.61E-11	6.08E-12	1.30E-11	6.19E-11
Mercury (80)	Hg-193m	5.14E+02	1.35E-03	1.53E+01	2.04E+01	6.79E+00	1.09E+01	6.95E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.12E-11	1.49E-11	4.94E-12	7.92E-12	5.06E-11
Mercury (80)	Hg-194	1.58E-03	4.40E+02	3.57E-02	5.89E-02	1.81E-02	2.78E-02	1.78E-01	4.04E-02	4.04E-02	4.04E-02	4.04E-02	4.04E-02	8.54E-09	1.41E-08	4.33E-09	6.64E-09	4.24E-08
Mercury (80)	Hg-195	5.77E+02	1.20E-03	1.23E+02	1.06E+02	4.54E+01	1.93E+02	4.83E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.10E-11	6.98E-11	2.98E-11	1.27E-10	3.17E-10
Mercury (80)	Hg-195m	1.46E+02	4.75E-03	1.74E+01	1.55E+01	6.49E+00	2.80E+01	8.16E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.52E-11	4.01E-11	1.68E-11	1.27E-11	2.12E-10
Mercury (80)	Hg-197	9.35E+01	7.41E-03	1.38E+02	7.44E+01	3.72E+01	2.32E+02	3.18E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.64E-10	3.04E-10	1.52E-10	9.47E-10	1.30E-09
Mercury (80)	Hg-197m	2.55E+02	2.72E-03	1.32E+02	8.87E+01	3.99E+01	2.10E+02	4.12E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.97E-10	1.33E-10	5.99E-11	3.14E-10	6.18E-10
Mercury (80)	Hg-199m	8.54E+03	8.12E-05	2.91E+03	2.47E+03	1.05E+03	3.01E+03	1.04E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.32E-10	1.12E-10	4.75E-11	1.36E-10	4.69E-10
Mercury (80)	Hg-203	5.43E+00	1.28E-01	1.96E+00	3.98E+00	1.15E+00	1.44E+00	1.07E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.42E-10	2.89E-10	8.34E-11	1.05E-10	7.75E-10
Mercury (80)	Hg-205	7.00E+04	9.89E-06	1.55E+18	1.36E+18	4.77E+17	1.16E+18	5.88E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.79E+03	7.73E+03	2.71E+03	6.57E+03	3.34E+03
Mercury (80)	Hg-206	4.47E+04	1.55E-05	3.07E+14	5.96E+14	1.75E+14	2.24E+14	1.19E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.75E+00	5.33E+00	1.56E+00	2.00E+00	1.06E+01
Mercury (80)	Hg-207	1.26E+05	5.52E-06	5.84E+16	1.58E+17	4.18E+16	4.10E+16	4.08E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.87E+02	5.05E+02	1.34E+02	1.31E+02	1.31E+03
Holmium (67)	Ho-150	2.85E+05	2.44E-06	3.07E+03	7.27E+03	1.49E+03	1.80E+03	2.04E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.14E-12	7.44E-12	1.52E-12	1.84E-12	2.09E-11
Holmium (67)	Ho-153	1.81E+05	3.82E-06	3.65E+03	7.00E+03	1.54E+03	4.26E+03	1.95E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.97E-12	1.15E-11	2.52E-12	6.98E-12	3.20E-11
Holmium (67)	Ho-153m	3.92E+04	1.77E-05	7.90E+02	1.52E+03	3.34E+02	9.23E+02	4.23E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.99E-12	1.15E-11	2.53E-12	7.00E-12	3.21E-11
Holmium (67)	Ho-154	3.10E+04	2.24E-05	2.58E+06	6.11E+06	1.26E+06	1.49E+06	1.72E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.49E-08	5.89E-08	1.21E-08	1.44E-08	1.66E-07
Holmium (67)	Ho-154m	1.17E+05	5.90E-06	7.65E+14	1.87E+15	4.65E+14	4.44E+14	4.73E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.94E+00	4.77E+00	1.18E+00	1.13E+00	1.20E+01
Holmium (67)	Ho-155	7.59E+03	9.13E-05	2.13E+02	3.72E+02	8.19E+01	2.14E+02	1.02E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.46E-12	1.47E-11	3.25E-12	8.48E-12	4.02E-11
Holmium (67)	Ho-156	6.50E+03	1.07E-04	8.87E+01	1.59E+02	3.74E+01	5.63E+01	4.32E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.13E-12	7.38E-12	1.74E-12	2.62E-12	2.01E-11
Holmium (67)	Ho-157	2.89E+04	2.40E-05	4.02E+03	7.10E+03	1.59E+03	3.86E+03	1.89E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.23E-11	7.48E-11	1.68E-11	4.07E-11	1.99E-10
Holmium (67)	Ho-159	1.10E+04	6.29E-05	1.04E+03	1.35E+03	3.24E+02	1.11E+03	3.54E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.90E-11	3.77E-11	9.07E-12	3.11E-11	9.90E-11
Holmium (67)	Ho-160	1.42E+04	4.87E-05	4.05E+07	7.01E+07	1.53E+07	2.46E+07	2.03E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.84E-07	1.53E-06	3.33E-07	5.38E-07	4.43E-06
Holmium (67)	Ho-161	2.45E+03	2.83E-04	6.91E+03	5.18E+03	1.83E+03	1.34E+04	1.23E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.82E-10	6.62E-10	2.33E-10	1.71E-09	1.56E-09
Holmium (67)	Ho-162	2.43E+04	2.85E-05	4.19E+12	6.53E+12	1.59E+12	7.08E+12	1.97E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.42E-02	8.45E-02	2.06E-02	9.17E-02	2.55E-01
Holmium (67)	Ho-162m	5.44E+03	1.27E-04	3.27E+02	5.05E+02	1.24E+02	3.78E+02	1.63E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.89E-11	2.92E-11	7.20E-12	2.18E-11	9.43E-11
Holmium (67)	Ho-163	1.52E+04	4.57E+03															
Holmium (67)	Ho-164	1.26E+04	5.52E-05	5.48E+09	3.30E+09	1.25E+09	8.31E+09	5.96E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.39E-04	8.36E-05	3.18E-05	2.11E-04	1.51E-04
Holmium (67)	Ho-164m	9.59E+03	7.23E-05	3.43E+04	1.59E+04	7.85E+03	5.58E+04	4.26E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.14E-09	5.26E-10	2.61E-10	1.85E-09	1.41E-09
Holmium (67)	Ho-166	2.27E+02	3.06E-03	2.36E+03	1.85E+03	8.06E+02	3.46E+03	2.71E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.36E-09	2.63E-09	1.15E-09	4.91E-09	3.86E-09
Holmium (67)	Ho-166m	5.78E-04	1.20E+03	1.56E-02	3.00E-02	7.22E-03	8.95E-03	8.17E-02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.72E-09	1.67E-08	4.03E-09	4.99E-09	4.56E-08
Holmium (67)	Ho-167	1.96E+03	3.54E-04	3.70E+02	7.40E+02	1.86E+02	2.52E+02	1.79E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.12E-11	1.22E-10	3.08E-11	4.17E-11	2.98E-10
Holmium (67)	Ho-168	1.22E+05	5.69E-06	1.84E+16	3.35E+16	8.14E+15	9.98E+15	9.32E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.91E+01	8.97E+01	2.18E+01	2.67E+01	2.49E+02
Holmium (67)	Ho-168m	1.66E+05	4.19E-06	8.61E+15	1.57E+16	3.82E+15	4.68E+15	4.37E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.70E+01	3.10E+01	7.52E+00	9.22E+00	8.60E+01
Holmium (67)	Ho-170	1.32E+05	5.25E-06	4.09E+15	7.42E+15	1.83E+15	2.65E+15	2.05E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.02E+01	1.85E+01	4.56E+00	6.62E+00	5.13E+01
Iodine (53)	I-118	2.66E+04	2.61E-05	5.35E+03	1.22E+04	1.98E+03	1.45E+04	5.25E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.61E-11	1.05E-10	1.71E-11	1.24E-10	4.53E-10
Iodine (53)	I-118m	4.29E+04	1.62E-05	8.63E+03	1.96E+04	3.20E+03	2.33E+04	8.47E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.61E-11	1.05E-10	1.71E-11	1.25E-10	4.53E-10
Iodine (53)	I-119	1.91E+04	3.63E-05	8.37E+02	1.87E+03	3.78E+02	6.98E+02	7.13E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.01E-11	2.26E-11	4.57E-12	8.45E-12	8.64E-11
Iodine (53)	I-120	4.46E+03	1.55E-04	7.31E+01														

Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)															
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	Plane BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	External Exposure Dose (yrs)	BDCC DL=1 (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)	Plane BDCC DL=1 (mg/cm ²)	
Iodine (49)	In-108	6.28E+03	1.10E-04	2.41E+01	5.83E+01	1.32E+01	1.44E+01	1.86E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.03E-13	1.95E-12	4.39E-13	4.82E-13	6.20E-12	
Iodine (49)	In-108m	9.20E+03	7.53E-05	1.25E+02	3.15E+02	6.86E+01	7.66E+01	1.04E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.86E-12	7.18E-12	1.56E-12	1.75E-12	2.38E-11	
Iodine (49)	In-109	1.45E+03	4.79E-04	7.72E+01	1.58E+02	3.24E+01	8.46E+01	5.32E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.13E-11	2.31E-11	4.75E-12	1.24E-11	7.78E-11	
Iodine (49)	In-109m	2.72E+05	2.55E-06	1.44E+04	2.95E+04	6.07E+03	1.58E+04	9.95E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.12E-11	2.30E-11	4.72E-12	1.23E-11	7.74E-11	
Iodine (49)	In-110	1.24E+03	5.59E-04	6.31E+00	1.47E+01	3.23E+00	3.76E+00	4.93E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.09E-12	2.53E-12	5.56E-13	6.47E-13	8.50E-12	
Iodine (49)	In-110m	5.27E+03	1.31E-04	1.66E+02	3.88E+02	8.34E+01	9.44E+01	1.30E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.73E-12	1.56E-11	3.38E-12	3.82E-12	5.26E-11	
Iodine (49)	In-111	9.02E+01	7.68E-03	7.44E+00	1.22E+01	2.80E+00	7.25E+00	3.90E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.78E-11	2.92E-11	6.69E-12	1.73E-11	9.32E-11	
Iodine (49)	In-111m	4.73E+04	1.46E-05	3.89E+03	6.41E+03	1.47E+03	3.80E+03	2.04E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.77E-11	2.92E-11	6.68E-12	1.73E-11	9.30E-11	
Iodine (49)	In-112	2.43E+04	2.85E-05	5.52E+12	1.26E+13	2.17E+12	1.30E+13	5.81E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.93E-02	1.12E-01	1.94E-02	1.16E-01	5.19E-01	
Iodine (49)	In-112m	1.77E+04	3.91E-05	1.78E+10	4.00E+10	6.91E+09	4.18E+10	1.82E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.18E-04	4.91E-04	8.48E-05	5.13E-04	2.23E-03	
Iodine (49)	In-113m	3.66E+03	1.89E-04	1.24E+03	2.43E+03	5.15E+02	9.47E+02	8.24E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.42E-11	1.45E-10	3.08E-11	5.67E-11	4.93E-10	
Iodine (49)	In-114	3.04E+05	2.28E-06	7.08E+22	6.76E+22	2.30E+22	1.05E+23	5.15E+22	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.15E+07	4.92E+07	1.67E+07	7.61E+07	3.75E+07	
Iodine (49)	In-114m	5.11E+00	1.36E-01	6.18E+00	1.28E+01	2.25E+00	1.25E+01	4.98E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.68E-10	5.54E-10	9.75E-11	5.41E-10	2.15E-09	
Iodine (49)	In-115	1.57E-15	4.41E+14																
Iodine (49)	In-115m	1.35E+03	5.12E-04	7.08E+02	1.48E+03	2.70E+02	8.47E+02	5.15E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.17E-10	2.44E-10	4.45E-11	1.40E-10	8.50E-10	
Iodine (49)	In-116m	6.69E+03	1.04E-04	9.30E+01	2.58E+02	6.25E+01	5.02E+01	7.55E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.13E-12	8.67E-12	2.10E-12	1.69E-12	2.54E-11	
Iodine (49)	In-117	8.43E+03	8.22E-05	5.11E+02	1.30E+03	3.32E+02	3.08E+02	2.98E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.38E-11	3.50E-11	8.94E-12	8.29E-12	8.02E-11	
Iodine (49)	In-117m	3.13E+03	2.21E-04	3.72E+02	9.20E+02	2.28E+02	2.31E+02	2.09E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.70E-11	6.66E-11	1.65E-11	1.68E-11	1.52E-10	
Iodine (49)	In-118	4.37E+06	1.59E-07	4.59E+27	8.67E+27	2.65E+27	2.16E+27	1.42E+28	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.40E+11	4.54E+11	1.39E+11	1.13E+11	7.44E+11	
Iodine (49)	In-118m	8.35E+04	8.30E-06	1.28E+14	3.87E+14	9.04E+13	7.19E+13	1.12E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.50E-01	1.06E+00	2.48E+01	1.97E-01	3.07E+00	
Iodine (49)	In-119	1.52E+05	4.57E-06	3.06E+09	1.49E+09	6.55E+08	8.31E+09	1.82E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.65E-06	2.27E-06	9.97E-07	1.27E-05	2.76E-06	
Iodine (49)	In-119m	2.02E+04	3.42E-05	7.24E+09	3.55E+09	1.56E+09	1.93E+10	4.32E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.27E-05	4.05E-05	1.77E-05	2.21E-04	4.93E-05	
Iodine (49)	In-121	9.46E+05	7.32E-07	3.46E+11	1.91E+11	8.99E+10	9.85E+11	2.79E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.58E-05	4.75E-05	2.23E-05	2.44E-04	6.92E-05	
Iodine (49)	In-121m	9.39E+04	7.38E-06	2.86E+12	1.58E+12	7.44E+11	8.14E+12	2.30E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.75E-03	3.96E-03	1.86E-03	2.04E-02	5.76E-03	
Iridium (77)	Ir-180	2.43E+05	2.85E-06	1.83E+10	2.17E+10	6.70E+09	1.43E+10	7.67E+10	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.63E-05	3.12E-05	9.64E-06	2.05E-05	1.10E-04	
Iridium (77)	Ir-182	2.43E+04	2.85E-05	5.10E+02	5.81E+02	1.85E+02	3.99E+02	1.99E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.42E-12	8.44E-12	2.70E-12	5.80E-12	2.90E-11	
Iridium (77)	Ir-183	6.28E+03	1.10E-04	9.87E+01	1.16E+02	3.95E+01	8.11E+01	4.15E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.58E-12	6.55E-12	2.23E-12	4.59E-12	2.35E-11	
Iridium (77)	Ir-184	1.96E+03	3.53E-04	2.15E+01	3.47E+01	1.02E+01	1.50E+01	1.06E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.90E-12	6.31E-12	1.85E-12	2.72E-12	1.93E-11	
Iridium (77)	Ir-185	4.22E+02	1.64E-03	8.94E+00	1.07E+01	3.89E+00	8.68E+00	4.51E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.61E-12	9.09E-12	3.31E-12	7.39E-12	3.84E-11	
Iridium (77)	Ir-186	3.65E+02	1.90E-03	4.92E+00	8.10E+00	2.40E+00	3.48E+00	2.45E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.87E-12	8.01E-12	2.37E-12	3.44E-12	2.42E-11	
Iridium (77)	Ir-186m	3.16E+03	2.19E-04	6.23E+01	9.77E+01	2.86E+01	4.27E+01	3.05E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.11E-12	1.12E-11	3.26E-12	4.88E-12	3.48E-11	
Iridium (77)	Ir-187	5.78E+02	1.20E-03	8.25E+01	7.60E+01	3.10E+01	9.35E+01	3.27E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.18E-11	4.77E-11	1.95E-11	5.87E-11	2.05E-10	
Iridium (77)	Ir-188	1.46E+02	4.74E-03	2.10E+00	3.33E+00	1.01E+00	1.47E+00	1.09E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.23E-12	8.29E-12	2.53E-12	3.66E-12	2.71E-11	
Iridium (77)	Ir-189	1.92E+01	3.62E-02	2.55E+01	1.41E+01	7.03E+00	3.84E+01	6.30E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.87E-10	2.70E-10	1.34E-10	7.36E-10	1.21E-09	
Iridium (77)	Ir-190	2.15E+01	3.23E-02	2.99E-01	5.50E-01	1.53E-01	1.80E-01	1.52E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.13E-12	9.45E-12	2.63E-12	3.10E-12	2.61E-11	
Iridium (77)	Ir-190m	5.42E+03	1.28E-04	7.54E+01	1.39E+02	3.87E+01	4.55E+01	3.84E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.13E-12	9.45E-12	2.63E-12	3.10E-12	2.61E-11	
Iridium (77)	Ir-190m	1.97E+03	3.52E-04	2.49E+01	4.98E+01	1.40E+01	1.41E+01	1.41E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.67E-12	9.33E-12	2.62E-12	2.64E-12	2.64E-11	
Iridium (77)	Ir-191m	4.42E+06	1.57E-07	5.73E+26	3.36E+26	1.58E+26	9.10E+26	1.60E+27	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.80E+10	2.81E+10	1.63E+10	7.62E+10	1.34E+11	
Iridium (77)	Ir-192	3.43E+00	2.02E-01	1.43E-01	4.07E-01	1.09E-01	9.48E-02	9.36E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.55E-11	4.43E-11	1.18E-11	1.03E-11	1.02E-10	
Iridium (77)	Ir-192m	2.51E+05	2.76E-06	1.05E+04	2.99E+04	7.98E+03	6.95E+03	8.86E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.55E-11	4.43E-11	1.18E-11	1.03E-11	1.02E-10	
Iridium (77)	Ir-192n	2.88E+03	2.41E+02	4.05E-02	1.16E-01	3.09E-02	2.69E-02	2.66E-01	1.69E+00	1.69E+00	1.69E+00	1.69E+00	1.69E+00	5.25E-09	1.50E-08	4.00E-09	3.49E-09	3.44E-08	
Iridium (77)	Ir-193m	2.40E+01	2.88E-02	2.77E+04	1.07E+04	6.27E+03	4.97E+04	7.22E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.33E-07	1.67E-07	9.77E-08	7.75E-07	1.13E-06	
Iridium (77)	Ir-194	3.15E+02	2.20E-03	1.18E+03	3.14E+03	8.72E+02	7.80E+02	3.98E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.42E-09	3.76E-09	1.04E-09	9.33E-10	4.76E-09	
Iridium (77)	Ir-194m	1.48E+00	4.68E-01	1.23E-02	3.37E-02	8.99E-03	6.76E-03	8.64E-02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.13E-12	8.56E-12	2.29E-12	1.72E-12	2.20E-11	
Iridium (77)	Ir-195	2.43E+03	2.85E-04	5.57E+03	3.20E+03	1.56E+03	8.90E+03	9.47E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.68E-10	4.99E-10	2.43E-10	1.39E-09	1.48E-09	
Iridium (77)	Ir-195m	1.60E+03	4.34E-04	2.43E+02	2.61E+02	9.68E+01	1.80E+02	9.26E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.74E-11	6.18E-11	2.29E-11	4.26E-11	2.19E-10	
Iridium (77)	Ir-196	4.20E+05	1.65E-06	2.25E+20	5.49E+20	1.53E+20	1.32E+20	9.91E+20	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.04E+05	4.96E+05	1.38E+05	1.19E+05	8.97E+05	
Iridium (77)	Ir-196m	4.34E+03	1.60E-04	2.56E+01	6.07E+01	1.73E+01	1.36E+01	1.66E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.25E-12	5.32E-12	1.52E-12	1.20E-12	1.45E-11	
Potassium (19)	K-38																		

Resident 3-D BDCCs October 2024																				
Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)														
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume BDCC DL=1 (pCi/g)	Soil Volume 1cm BDCC DL=1 (pCi/g)	Soil Volume 5cm BDCC DL=1 (pCi/g)	Soil Volume 15cm BDCC DL=1 (pCi/g)	Ground Plane BDCC DL=1 (pCi/cm ²)	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose			
									Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	BDCC DL=1 (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)	Ground Plane BDCC DL=1 (mg/cm ²)		
Lanthanum (57)	La-128	7.03E+04	9.86E-06	7.03E+03	1.76E+04	3.64E+03	8.02E+03	5.41E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.48E-11	6.20E-11	1.29E-11	2.83E-11	1.91E-10
Lanthanum (57)	La-129	3.14E+04	2.21E-05	1.46E+03	3.74E+03	7.31E+02	2.20E+03	1.21E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.16E-11	2.98E-11	5.83E-12	1.75E-11	9.62E-11
Lanthanum (57)	La-130	4.19E+04	1.66E-05	3.08E+12	7.64E+12	1.76E+12	1.75E+12	1.98E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.86E-02	4.60E-02	1.06E-02	1.05E-02	1.19E-01
Lanthanum (57)	La-131	6.17E+03	1.12E-04	1.68E+02	3.94E+02	8.04E+01	2.01E+02	1.16E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.93E-12	1.62E-11	3.31E-12	8.29E-12	4.77E-11
Lanthanum (57)	La-132	1.26E+03	5.48E-04	2.12E+01	5.30E+01	1.14E+01	1.34E+01	1.52E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.29E-12	1.07E-11	2.32E-12	2.71E-12	3.07E-11
Lanthanum (57)	La-132m	1.50E+04	4.62E-05	3.30E+02	8.28E+02	1.78E+02	2.08E+02	2.37E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.65E-12	1.41E-11	3.05E-12	3.56E-12	4.04E-11
Lanthanum (57)	La-133	1.55E+03	4.47E-04	3.29E+02	8.89E+02	1.72E+02	8.24E+02	2.90E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.47E-11	1.48E-10	2.87E-11	1.37E-10	4.82E-10
Lanthanum (57)	La-134	5.65E+04	1.23E-05	1.19E+14	3.87E+14	6.60E+13	3.14E+14	1.23E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.49E-01	1.78E+00	3.04E-01	1.45E+00	5.68E+00
Lanthanum (57)	La-135	3.11E+02	2.23E-03	9.79E+02	2.28E+03	5.06E+02	3.44E+03	4.79E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.24E-10	1.92E-09	4.26E-10	2.89E-09	4.03E-09
Lanthanum (57)	La-136	3.69E+04	1.88E-05	1.10E+13	3.79E+13	6.29E+12	3.83E+13	1.25E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.89E-02	2.71E-01	4.50E-02	2.74E-01	8.91E-01
Lanthanum (57)	La-137	1.16E-05	6.00E+04	2.04E+01	1.76E+01	6.94E+00	6.69E+01	2.45E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.70E-04	4.06E+04	1.60E-04	1.54E-03	5.64E-04
Lanthanum (57)	La-138	6.79E-12	1.02E+11	3.35E-02	9.63E-02	1.89E-02	3.23E-02	1.33E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.32E+00	3.80E+00	7.46E-01	1.27E+00	1.23E+01
Lanthanum (57)	La-140	1.51E+02	4.60E-03	2.18E+00	7.06E+00	1.73E+00	1.47E+00	1.80E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.93E-12	1.27E-11	3.13E-12	2.66E-12	3.25E-11
Lanthanum (57)	La-141	1.55E+03	4.47E-04	3.44E+03	5.54E+03	1.31E+03	2.39E+03	1.22E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.08E-10	9.79E-10	2.31E-10	4.23E-10	2.15E-09
Lanthanum (57)	La-142	4.00E+03	1.73E-04	7.30E+01	2.56E+02	5.89E+01	4.29E+01	6.86E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.03E-12	1.76E-11	4.06E-12	2.96E-12	4.73E-11
Lanthanum (57)	La-143	2.57E+04	2.70E-05	3.89E+03	1.08E+04	2.00E+03	5.38E+03	2.48E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.21E-11	1.16E-10	2.17E-11	5.82E-11	2.69E-10
Lutetium (71)	Lu-165	3.39E+04	2.04E-05	2.53E+03	3.18E+03	7.56E+02	1.91E+03	9.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.39E-11	3.00E-11	7.13E-12	1.81E-11	8.67E-11
Lutetium (71)	Lu-167	7.07E+03	9.80E-05	1.09E+02	1.52E+02	3.79E+01	8.66E+01	4.70E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.01E-12	6.97E-12	1.74E-12	3.97E-12	2.15E-11
Lutetium (71)	Lu-169	1.78E+02	3.89E-03	4.06E+00	4.96E+00	1.25E+00	3.07E+00	1.45E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.46E-12	9.13E-12	2.31E-12	5.65E-12	2.67E-11
Lutetium (71)	Lu-169m	1.37E+05	5.07E-06	3.11E+03	3.80E+03	9.60E+02	2.35E+03	1.11E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.46E-12	9.12E-12	2.30E-12	5.65E-12	2.67E-11
Lutetium (71)	Lu-170	1.26E+02	5.51E-03	1.65E+00	2.65E+00	6.46E-01	1.08E+00	8.34E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.32E-12	6.95E-12	1.70E-12	2.82E-12	2.19E-11
Lutetium (71)	Lu-171	3.07E+01	2.26E-02	1.58E+00	1.66E+00	4.94E-01	1.49E+00	6.55E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.17E-11	1.80E-11	5.34E-12	1.62E-11	7.08E-11
Lutetium (71)	Lu-171m	2.77E+05	2.51E-06	1.43E+04	1.50E+04	4.45E+03	1.35E+04	5.90E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.71E-11	1.80E-11	5.34E-12	1.62E-11	7.08E-11
Lutetium (71)	Lu-172	3.78E+01	1.84E-02	4.71E-01	7.33E-01	1.83E-01	3.18E-01	2.23E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.17E-12	6.48E-12	1.62E-12	2.81E-12	1.97E-11
Lutetium (71)	Lu-172m	9.84E+04	7.04E-06	1.23E+03	1.91E+03	4.77E+02	8.29E+02	5.82E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.17E-12	6.48E-12	1.62E-12	2.81E-12	1.97E-11
Lutetium (71)	Lu-173	5.06E-01	1.37E+00	5.83E-01	3.99E-01	1.22E-01	5.07E-01	1.14E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.87E-10	2.64E-10	8.07E-11	3.36E-10	7.57E-10
Lutetium (71)	Lu-174	2.09E-01	3.31E+00	1.03E+00	8.24E-01	2.75E-01	1.13E+00	2.94E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.66E-09	1.33E-09	4.44E-10	1.83E-09	4.74E-09
Lutetium (71)	Lu-174m	1.78E+00	3.89E-01	3.55E+00	1.86E+00	9.13E-01	5.02E+00	7.42E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.72E-10	3.52E-10	1.73E-10	9.51E-10	1.41E-09
Lutetium (71)	Lu-176	1.80E-11	3.85E+10	9.38E-02	1.34E-01	3.77E-02	6.85E-02	3.67E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.78E+00	2.54E+00	7.15E-01	1.30E+00	6.96E+00
Lutetium (71)	Lu-176m	1.67E+03	4.15E-04	5.26E+04	2.26E+04	1.25E+04	7.93E+04	3.00E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.08E-08	4.63E-09	2.56E-09	1.62E-08	6.14E-09
Lutetium (71)	Lu-177	3.81E+01	1.82E-02	6.03E+02	5.73E+02	1.67E+02	4.33E+02	1.61E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.44E-09	5.17E-09	1.50E-09	3.91E-09	1.45E-08
Lutetium (71)	Lu-177m	1.58E+00	4.39E-01	4.25E-02	5.75E-02	1.57E-02	3.06E-02	1.52E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.26E-12	1.25E-11	3.41E-12	6.65E-12	3.32E-11
Lutetium (71)	Lu-178	1.28E+04	5.40E-05	1.25E+09	1.35E+09	4.94E+08	1.11E+09	3.50E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.35E-05	3.64E-05	1.33E-05	2.98E-05	9.45E-05
Lutetium (71)	Lu-178m	1.58E+04	4.39E-05	3.09E+08	5.09E+08	1.43E+08	2.08E+08	1.25E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.77E-06	1.12E-05	3.14E-06	4.56E-06	2.74E-05
Lutetium (71)	Lu-179	1.32E+03	5.24E-04	3.31E+04	5.24E+04	1.33E+04	2.21E+04	4.86E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.70E-09	1.38E-08	3.48E-09	5.80E-09	1.28E-08
Lutetium (71)	Lu-180	6.39E+04	1.08E-05	2.08E+14	4.02E+14	1.06E+14	1.19E+14	1.12E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.14E+00	2.20E+00	5.80E-01	6.53E-01	6.14E+00
Lutetium (71)	Lu-181	1.04E+05	6.66E-06	9.41E+03	1.59E+04	4.80E+03	6.08E+03	4.49E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.18E-11	5.37E-11	1.62E-11	2.05E-11	1.52E-10
Magnesium (12)	Mg-27	3.85E+04	1.80E-05	1.65E+13	4.62E+13	1.07E+13	1.00E+13	1.23E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.25E-02	6.29E-02	1.46E-02	1.36E-02	1.67E-01
Magnesium (12)	Mg-28	2.90E+02	2.39E-03	3.85E+00	1.24E+01	2.58E+00	3.51E+00	3.63E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.20E-13	2.31E-12	4.82E-13	6.57E-13	6.79E-12
Manganese (25)	Mn-50m	2.08E+05	3.33E-06	2.19E+16	6.08E+16	1.42E+16	1.22E+16	1.75E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.02E+01	2.84E+01	6.63E+00	5.67E+00	8.18E+01
Manganese (25)	Mn-51	7.88E+03	8.79E-05	2.69E+04	2.29E+04	9.52E+03	3.04E+04	1.56E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.37E-10	2.87E-10	1.19E-10	3.82E-10	1.96E-09
Manganese (25)	Mn-52	4.52E+01	1.53E-02	3.06E-01	7.95E-01	1.91E-01	1.81E-01	2.45E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.82E-13	1.77E-12	4.27E-13	4.03E-13	5.46E-12
Manganese (25)	Mn-52m	1.73E+04	4.01E-05	6.65E+03	1.73E+04	4.16E+03	3.93E+03	5.33E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.89E-				

Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)															
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	BDCC DL=1 (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)	BDCC DL=1 (mg/cm ²)		
Niobium (41)	Nb-91m	4.16E+00	1.67E-01	8.53E+00	1.78E+01	3.74E+00	3.47E+01	1.16E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.62E-10	7.55E-10	1.59E-10	1.48E-09	4.92E-09	
Niobium (41)	Nb-92	2.00E-08	3.47E+07	1.77E-02	3.48E-02	9.50E-03	1.21E-02	1.37E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.59E-04	3.11E-04	8.49E-05	1.09E-04	1.23E-03	
Niobium (41)	Nb-92m	2.49E+01	2.78E-02	8.57E-01	1.72E+00	4.13E-01	1.01E+00	7.94E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.14E-12	1.23E-11	2.96E-12	7.23E-12	5.68E-11	
Niobium (41)	Nb-93m	4.30E-02	1.61E+01	1.89E+04	6.71E+03	4.28E+03	6.32E+04	4.59E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.95E-05	2.82E-05	1.80E-05	2.65E-04	1.93E-05	
Niobium (41)	Nb-94	3.41E-05	2.03E+04	2.26E-02	6.65E-02	1.50E-02	1.25E-02	1.94E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.21E-07	3.55E-07	8.03E-08	6.69E-08	1.04E-06	
Niobium (41)	Nb-94m	5.82E+04	1.19E-05	3.87E+07	1.14E+08	2.57E+07	2.15E+07	3.32E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.21E-07	3.57E-07	8.07E-08	6.73E-08	1.04E-06	
Niobium (41)	Nb-95	7.23E+00	9.59E-02	6.87E-01	1.93E+00	4.33E-01	3.77E-01	5.74E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.75E-11	4.91E-11	1.10E-11	9.61E-12	1.46E-10	
Niobium (41)	Nb-95m	7.01E+01	9.89E-03	6.48E+00	1.73E+01	3.85E+00	3.79E+00	5.43E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.70E-11	4.55E-11	1.01E-11	9.97E-12	1.43E-10	
Niobium (41)	Nb-96	2.60E+02	2.67E-03	2.60E+00	6.90E+00	1.65E+00	1.31E+00	1.97E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.86E-12	4.94E-12	1.18E-12	9.35E-13	1.41E-11	
Niobium (41)	Nb-97	5.05E+03	1.37E-04	4.46E+02	1.59E+03	3.52E+02	2.43E+02	4.27E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.66E-11	5.93E-11	1.31E-11	9.07E-12	1.59E-10	
Niobium (41)	Nb-98m	7.10E+03	9.76E-05	6.08E+01	1.68E+02	3.87E+01	3.28E+01	4.74E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.63E-12	4.51E-12	1.04E-12	8.80E-13	1.27E-11	
Niobium (41)	Nb-99	1.46E+06	4.76E-07	1.20E+06	1.60E+06	4.47E+05	6.00E+05	3.90E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.59E-10	2.11E-10	5.89E-11	7.91E-11	5.14E-10	
Niobium (41)	Nb-99m	1.40E+05	4.95E-06	1.16E+05	1.54E+05	4.29E+04	5.77E+04	3.75E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.59E-10	2.11E-10	5.89E-11	7.91E-11	5.14E-10	
Neodymium (60)	Nd-134	4.29E+04	1.62E-05	5.83E+03	1.86E+04	3.21E+03	1.54E+04	5.71E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.54E-11	1.13E-10	1.95E-11	9.35E-11	3.47E-10	
Neodymium (60)	Nd-135	2.94E+04	2.36E-05	9.39E+02	2.29E+03	4.52E+02	8.34E+02	6.61E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.38E-12	2.04E-11	4.03E-12	7.44E-12	5.89E-11	
Neodymium (60)	Nd-136	7.19E+03	9.64E-05	9.92E+01	2.53E+02	5.54E+01	5.98E+01	6.94E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.64E-12	9.27E-12	2.03E-12	2.19E-12	2.55E-11	
Neodymium (60)	Nd-137	9.46E+03	7.32E-05	1.65E+02	5.17E+02	9.54E+01	2.27E+02	1.42E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.65E-12	1.45E-11	2.68E-12	6.38E-12	3.99E-11	
Neodymium (60)	Nd-138	1.20E+03	5.75E-04	1.88E+02	6.32E+02	1.13E+02	5.72E+02	1.83E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.18E-11	1.40E-10	2.52E-11	1.27E-10	4.08E-10	
Neodymium (60)	Nd-139	1.23E+04	5.65E-05	2.20E+03	5.95E+03	1.13E+03	4.26E+03	1.57E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.84E-11	1.31E-10	2.48E-11	9.37E-11	3.46E-10	
Neodymium (60)	Nd-139m	1.10E+03	6.28E-04	1.23E+01	3.32E+01	6.48E+00	1.22E+01	9.38E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.00E-12	8.11E-12	1.58E-12	2.97E-12	2.29E-11	
Neodymium (60)	Nd-140	7.51E+01	9.23E-03	1.01E+01	3.53E+01	6.35E+00	3.85E+01	1.08E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.66E-11	1.28E-10	2.30E-11	1.39E-10	3.91E-10	
Neodymium (60)	Nd-141	2.44E+03	2.84E-04	1.69E+03	5.11E+03	1.10E+03	6.50E+03	1.56E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.89E-10	5.74E-10	1.23E-10	7.30E-10	1.75E-09	
Neodymium (60)	Nd-141m	3.52E+05	1.97E-06	2.42E+05	7.35E+05	1.58E+05	9.34E+05	2.24E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.88E-10	5.70E-10	1.22E-10	7.25E-10	1.74E-09	
Neodymium (60)	Nd-144	3.03E+16	2.29E+15																
Neodymium (60)	Nd-147	2.30E+01	3.01E-02	1.11E+01	2.53E+01	5.90E+00	1.66E+01	6.42E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.37E-10	3.13E-10	7.30E-11	2.06E-10	7.95E-10	
Neodymium (60)	Nd-149	3.51E+03	1.97E-04	5.73E+02	1.08E+03	2.39E+02	4.03E+02	2.31E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.71E-11	8.88E-11	1.97E-11	3.32E-11	1.90E-10	
Neodymium (60)	Nd-151	2.93E+04	2.37E-05	6.16E+03	1.26E+04	2.77E+03	4.64E+03	2.90E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.17E-11	1.26E-10	2.77E-11	4.64E-11	2.90E-10	
Neodymium (60)	Nd-152	3.20E+04	2.17E-05	3.06E+13	5.46E+13	1.36E+13	2.11E+13	1.22E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.83E-01	5.04E-01	1.26E-01	1.95E-01	1.13E+00	
Neon (10)	Ne-19	1.27E+06	5.46E-07	8.13E+26	1.27E+27	2.63E+26	5.28E+26	2.73E+27	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.36E+10	3.69E+10	7.64E+09	1.53E+10	7.92E+10	
Neon (10)	Ne-24	1.08E+05	6.43E-06	9.21E+02	3.09E+03	7.26E+02	5.61E+02	8.55E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.98E-13	1.33E-12	3.14E-13	2.42E-13	3.69E-12	
Nickel (28)	Ni-56	4.16E+01	1.66E-02	2.15E-01	4.51E-01	1.22E-01	1.26E-01	1.46E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.60E-13	1.18E-12	3.18E-13	3.29E-13	3.80E-12	
Nickel (28)	Ni-57	1.71E+02	4.06E-03	5.66E+00	9.41E+00	2.64E+00	3.19E+00	3.23E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.67E-12	6.11E-12	1.71E-12	2.07E-12	2.10E-11	
Nickel (28)	Ni-59	6.86E-06	1.01E+05	8.34E+03	6.41E+03	2.75E+03	1.56E+04	6.26E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.39E-01	1.07E-01	4.59E-02	2.60E-01	1.04E+00	
Nickel (28)	Ni-63	6.92E-03	1.00E+02																
Nickel (28)	Ni-65	2.41E+03	2.87E-04	6.85E+02	2.03E+03	4.94E+02	4.25E+02	5.14E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.58E-11	1.06E-10	2.59E-11	2.22E-11	2.69E-10	
Nickel (28)	Ni-66	1.11E+02	6.23E-03																
Neptunium (93)	Np-232	2.48E+04	2.80E-05	6.57E+04	1.94E+05	4.98E+04	3.65E+04	5.41E+05	9.77E+00	9.77E+00	9.77E+00	9.77E+00	9.77E+00	1.19E-09	3.53E-09	9.05E-10	6.63E-10	9.83E-09	
Neptunium (93)	Np-233	1.01E+04	6.89E-05	8.54E+03	9.13E+03	2.94E+03	1.51E+04	3.60E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.84E-10	4.10E-10	1.32E-10	6.78E-10	1.62E-09	
Neptunium (93)	Np-234	5.75E+01	1.21E-02	1.38E+00	2.63E+00	7.42E-01	1.95E+00	1.08E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.09E-11	2.08E-11	5.86E-12	1.54E-11	8.53E-11	
Neptunium (93)	Np-235	6.39E-01	1.09E+00	2.47E+02	1.84E+02	7.52E+01	7.52E+02	4.21E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.76E-07	1.31E-07	5.37E-08	5.37E-07	3.00E-07	
Neptunium (93)	Np-236	4.50E-06	1.54E+05	9.04E-02	1.42E-01	4.12E-02	8.45E-02	6.02E-01	6.94E+02	6.45E+02	6.57E+02	7.40E+02	6.81E+02	9.19E-06	1.45E-05	4.20E-06	8.60E-06	6.12E-05	
Neptunium (93)	Np-236m	2.70E+02	2.57E-03	6.33E+02	7.04E+02	2.23E+02	8.71E+02	3.01E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.07E-09	1.20E-09	3.78E-10	1.48E-09	5.12E-09	
Neptunium (93)	Np-237	3.23E-07	2.14E+06	1.18E-01	1.57E-01	4.97E-02	1.52E-01	6.70E+01	4.60E+05	4.68E+05	4.46E+05	5.17E+05	4.86E+05	1.67E-04	2.23E-04	7.08E-05	2.17E-04	9.54E-04	
Neptunium (93)	Np-238	1.19E+02	5.80E-03	1.12E+01	2.08E+01	5.30E+00	1.33E+01	9.17E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.33E-11	8.04E-11	2.05E-11	5.13E-11	3.55E-10	
Neptunium (93)	Np-239	1.07E+02	6.46E-03	2.49E+01	3.09E+01	8.83E+00	3.92E+01	1.26E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.07E-10	1.34E-10	3.81E-11	1.69E-10	5.43E-10	
Neptunium (93)	Np-240	5.88E+03	1.18E-04	1.12E+02	1.99E+02	5.11E+01	1.24E+02	8.26E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.90E-12	1.58E-11	4.04E-12	9.85E-12	6.54E-11	
Neptunium (93)	Np-240m	5.04E+04	1.37E-05	2.79E+07	4.95E+07	1.27E+07	3.09E+07	2.05E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.58E-07	4.57E-07	1.17E-07	2.86E-07	1.90E-06	
Neptunium (93)	Np-241	2.62E+04	2.64E-05	4.25E+08	2.77E+08	7.68E+07	4.15E+08	3.06E+08	7.08E+01	7.10E+01	7.11E+01	7.12E+01	7.14E+01	7.59E-06	4.95E-06	1.37E-06	7.47E-06	5.46E-06	
Neptunium (93)	Np-242	1.66E+05	4.19E-06	3.26E+13	9.43E+13	2.35E+13	1.89E+13	2.59E+14	5.60E+06	5.59E+06	5.59E+06	5.60E+06	5.57E+06	9.24E-02	2.67E-01	6.66E-02	5.37E-02	7.34E-01	
Ne																			

Resident 3-D BDCCs October 2024																			
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)															
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground
				BDCC	1cm BDCC	5cm BDCC	15cm BDCC	Plane	Start Time	Start Time	Start Time	Start Time	Start Time	BDCC	1cm BDCC	5cm BDCC	15cm BDCC	Plane	BDCC
				DL=1	DL=1	DL=1	DL=1	DL=1	External	External	External	External	External	External	DL=1	DL=1	DL=1	DL=1	DL=1
				(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/cm ²)	Exposure	Exposure	Exposure	Exposure	Exposure	Exposure	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/cm ²)
Phosphorus (15)	P-32	1.77E+01	3.91E-02																
Phosphorus (15)	P-33	9.98E+00	6.94E-02																
Protactinium (91)	Pa-227	9.51E+03	7.29E-05	8.81E+03	1.09E+04	3.70E+03	1.34E+04	4.88E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.08E-10	5.04E-10	1.71E-10	6.18E-10	2.26E-09
Protactinium (91)	Pa-228	2.76E+02	2.51E-03	2.86E+00	5.15E+00	1.52E+00	2.93E+00	2.06E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.59E-12	8.25E-12	2.43E-12	4.70E-12	3.30E-11
Protactinium (91)	Pa-229	1.69E+02	4.11E-03	2.21E+02	2.08E+02	7.40E+01	4.47E+02	9.11E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.81E-10	5.47E-10	1.95E-10	1.18E-09	2.40E-09
Protactinium (91)	Pa-230	1.45E+01	4.77E-02	6.11E-01	9.92E-01	2.98E-01	7.79E-01	4.21E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.87E-11	3.05E-11	9.16E-12	2.39E-11	1.29E-10
Protactinium (91)	Pa-231	2.12E-05	3.28E+04	1.62E-01	2.10E-01	6.95E-02	2.68E-01	9.70E-01	2.21E+02	2.21E+02	2.21E+02	2.22E+02	2.22E+02	2.22E+02	3.43E-06	4.44E-06	1.47E-06	5.68E-06	2.06E-05
Protactinium (91)	Pa-232	1.93E+02	3.59E-03	6.95E+00	1.27E+01	3.42E+00	6.26E+00	4.95E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.62E-11	2.95E-11	7.96E-12	1.46E-11	1.15E-10
Protactinium (91)	Pa-233	9.38E+00	7.39E-02	1.73E+00	2.42E+00	7.14E-01	2.67E+00	1.08E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.33E-11	1.17E-10	3.44E-11	1.29E-10	5.22E-10
Protactinium (91)	Pa-234	9.06E+02	7.65E-04	1.09E+01	1.92E+01	5.26E+00	1.10E+01	7.34E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.44E-12	9.62E-12	2.64E-12	5.51E-12	3.68E-11
Protactinium (91)	Pa-234m	3.11E+05	2.23E-06	2.30E+06	4.07E+06	1.11E+06	2.33E+06	1.56E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.35E-09	5.94E-09	1.63E-09	3.40E-09	2.27E-08
Protactinium (91)	Pa-235	1.49E+04	4.66E-05	9.47E+11	3.07E+11	2.55E+11	1.70E+12	2.78E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.91E-02	9.41E-03	7.83E-03	5.20E-02	8.54E-03
Protactinium (91)	Pa-236	4.00E+04	1.73E-05	1.31E+13	3.21E+13	8.60E+12	8.38E+12	1.01E+14	2.17E+08	2.17E+08	2.17E+08	2.17E+08	2.17E+08	2.17E+08	1.49E-01	3.67E-01	9.84E-02	9.59E-02	1.15E+00
Protactinium (91)	Pa-237	4.19E+04	1.66E-05	1.34E+04	1.47E+04	4.56E+03	2.63E+04	5.94E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.47E-10	1.62E-10	5.01E-11	2.89E-10	6.53E-10
Lead (82)	Pb-194	3.04E+04	2.28E-05	1.75E+03	2.66E+03	8.35E+02	1.04E+03	7.63E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.17E-11	3.30E-11	1.04E-11	1.28E-11	9.46E-11
Lead (82)	Pb-195m	2.43E+04	2.85E-05	5.04E+02	6.65E+02	2.48E+02	4.99E+02	2.77E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.86E-12	1.04E-11	3.86E-12	7.77E-12	4.32E-11
Lead (82)	Pb-196	9.84E+03	7.04E-05	1.35E+02	2.22E+02	6.93E+01	8.69E+01	6.82E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.23E-12	8.59E-12	2.68E-12	3.36E-12	2.63E-11
Lead (82)	Pb-197	4.55E+04	1.52E-05	4.27E+03	4.74E+03	1.82E+03	4.20E+03	1.74E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.58E-11	3.98E-11	1.53E-11	3.52E-11	1.46E-10
Lead (82)	Pb-197m	8.47E+03	8.18E-05	1.29E+02	1.82E+02	6.07E+01	9.40E-01	6.02E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.82E-12	8.23E-12	2.74E-12	4.24E-12	2.72E-11
Lead (82)	Pb-198	2.53E+03	2.74E-04	3.12E+01	5.16E+01	1.58E+01	1.99E+01	1.59E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.74E-12	7.83E-12	2.40E-12	3.02E-12	2.42E-11
Lead (82)	Pb-199	4.05E+03	1.71E-04	1.29E+02	1.88E+02	6.07E+01	9.90E-01	5.93E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.23E-11	1.79E-11	5.79E-12	9.44E-12	5.65E-11
Lead (82)	Pb-200	2.82E+02	2.45E-03	6.28E+00	9.47E+00	2.95E+00	4.06E+00	2.92E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.63E-12	1.30E-11	4.05E-12	5.58E-12	4.01E-11
Lead (82)	Pb-201	6.51E+02	1.07E-03	3.06E+01	4.18E+01	1.38E+01	2.27E+01	1.28E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.83E-11	2.51E-11	8.30E-12	1.36E-11	7.69E-11
Lead (82)	Pb-201m	3.58E+05	1.93E-06	1.68E+04	2.30E+04	7.61E+03	1.25E+04	7.06E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.83E-11	2.50E-11	8.29E-12	1.36E-11	7.69E-11
Lead (82)	Pb-202	1.32E-05	5.25E+04	1.10E-01	1.39E-01	4.86E-02	7.50E-02	4.43E-01	5.35E-01	5.35E-01	5.35E-01	5.35E-01	5.35E-01	3.27E-06	4.13E-06	1.44E-06	2.23E-06	1.32E-05	
Lead (82)	Pb-202m	1.72E+03	4.03E-04	2.11E+01	4.65E+01	1.28E+01	1.19E+01	1.39E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.81E-12	1.06E-11	2.92E-12	2.71E-12	3.17E-11
Lead (82)	Pb-203	1.17E+02	5.92E-03	1.84E+01	2.02E+01	7.65E+00	1.62E+01	7.04E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.19E-11	6.81E-11	2.57E-11	5.45E-11	2.37E-10
Lead (82)	Pb-204m	5.42E+03	1.28E-04	6.86E+01	1.78E+02	4.53E+01	4.15E+01	4.91E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.01E-12	1.30E-11	3.31E-12	3.03E-12	3.59E-11
Lead (82)	Pb-205	4.53E-08	1.53E+07	9.33E+04	1.71E+04	2.03E+04	1.84E+05	5.12E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.20E+02	1.50E+02	1.78E+02	1.62E+03	4.50E+01
Lead (82)	Pb-209	1.87E+03	3.71E-04																
Lead (82)	Pb-210	3.12E-02	2.22E+01	2.46E+02	9.31E+01	6.64E+01	6.64E+02	3.99E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.21E-06	1.22E-06	8.67E-07	8.67E-06	5.21E-06
Lead (82)	Pb-211	1.01E+04	6.87E-05	5.70E+04	1.15E+05	3.41E+04	3.36E+04	2.34E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.31E-09	4.67E-09	1.38E-09	1.36E-09	9.50E-09
Lead (82)	Pb-212	5.71E+02	1.21E-03	1.38E+01	4.07E+01	1.04E+01	7.64E+00	1.13E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.92E-12	2.93E-11	7.52E-12	5.51E-12	8.17E-11
Lead (82)	Pb-214	1.36E+04	5.10E-05	9.80E+06	1.83E+07	6.31E+06	6.05E+06	5.99E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.99E-07	5.60E-07	1.93E-07	1.85E-07	1.83E-06
Palladium (46)	Pd-100	6.97E+01	9.95E-03	6.24E-01	1.33E+00	3.05E-01	4.04E-01	4.73E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.74E-12	3.71E-12	8.50E-13	1.13E-12	1.32E-11
Palladium (46)	Pd-101	7.17E+02	9.67E-04	3.62E+01	7.25E+01	1.33E+01	6.44E+01	3.28E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.89E-12	1.98E-11	3.65E-12	1.76E-11	8.97E-11
Palladium (46)	Pd-103	1.49E+01	4.66E-02	2.16E+03	1.14E+03	5.02E+02	6.01E+03	1.19E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.90E-08	1.53E-08	6.74E-09	8.07E-08	1.59E-08
Palladium (46)	Pd-107	1.07E-07	6.50E+06																
Palladium (46)	Pd-109	4.43E+02	1.56E-03	1.30E+04	1.50E+04	3.97E+03	3.42E+04	1.25E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.21E-09	7.18E-09	1.89E-09	1.63E-08	5.95E-09
Palladium (46)	Pd-109m	7.77E+04	8.92E-06	2.27E+06	6.92E+06	6.92E+05	5.96E+06	2.17E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.17E-09	7.15E-09	1.88E-09	1.62E-08	5.92E-09
Palladium (46)	Pd-111	1.56E+04	4.45E-05	5.75E+05	1.53E+06	4.11E+05	3.77E+05	1.76E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.96E-09	2.11E-08	5.68E-09	5.22E-09	2.44E-08
Palladium (46)	Pd-112	2.89E+02	2.40E-03	3.42E+01	1.17E+02	2.75E+01	1.90E+01	2.89E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.57E-11	8.81E-11	2.07E-11	1.43E-11	2.17E-10
Palladium (46)	Pd-114	1.51E+05	4.60E-06	4.54E+17	1.20E+18	3.35E+17	2.24E+17	2.27E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.67E+				

Resident 3-D BDCCs October 2024																				
Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)														
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume BDCC DL=1 (pCi/g)	Soil Volume 1cm BDCC DL=1 (pCi/g)	Soil Volume 5cm BDCC DL=1 (pCi/g)	Soil Volume 15cm BDCC DL=1 (pCi/g)	Ground Plane BDCC DL=1 (pCi/cm ²)	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose				
									Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	Soil Volume BDCC DL=1 (mg/kg)	Soil Volume 1cm BDCC DL=1 (mg/kg)	Soil Volume 5cm BDCC DL=1 (mg/kg)	Soil Volume 15cm BDCC DL=1 (mg/kg)	Ground Plane BDCC DL=1 (mg/cm ²)		
Radium (88)	Ra-222	5.75E+05	1.20E-06	4.53E+09	1.72E+09	1.22E+09	1.22E+10	7.36E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.39E-06	1.28E-06	9.16E-07	9.16E-06	5.51E-06
Radium (88)	Ra-223	2.21E+01	3.13E-02	9.16E+00	1.25E+01	4.30E+00	1.07E+01	4.36E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.79E-10	2.44E-10	8.40E-11	2.09E-10	8.53E-10
Radium (88)	Ra-224	6.91E+01	1.00E-02	1.67E+00	4.92E+00	1.26E+00	9.25E-01	1.37E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.05E-11	3.10E-11	7.94E-12	5.82E-12	8.62E-11
Radium (88)	Ra-225	1.70E+01	4.08E-02	7.52E+00	1.48E+01	4.65E+00	1.00E+00	4.89E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.93E-10	3.82E-10	1.20E-10	1.26E-10	9.95E-10
Radium (88)	Ra-226	4.33E-04	1.60E+03	3.07E-02	8.93E-02	2.22E-02	1.78E-02	2.45E-01	1.17E-01	1.18E-01	1.17E-01	1.17E-01	1.17E-01	1.18E-01	1.18E-01	3.10E-08	9.04E-08	2.25E-08	1.80E-08	2.48E-07
Radium (88)	Ra-227	8.63E+03	8.03E-05	5.17E+04	6.71E+04	2.23E+04	8.00E+04	2.97E+05	2.93E-01	2.92E-01	2.91E-01	3.02E-01	2.99E-01	2.99E-01	2.99E-01	2.64E-09	3.43E-09	1.14E-09	4.08E-09	1.51E-08
Radium (88)	Ra-228	1.21E-01	8.75E+00	2.69E-02	6.42E-02	1.74E-02	1.75E-02	2.05E+01	2.87E+00	2.29E+00	2.43E+00	3.32E+00	2.67E+00	2.67E+00	2.67E+00	9.87E-11	2.36E-10	6.37E-11	6.43E-11	7.54E-10
Radium (88)	Ra-230	3.92E+03	1.77E-04	5.21E+02	9.73E+02	2.86E+02	5.02E+02	3.58E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.94E-11	1.11E-10	3.25E-11	5.72E-11	4.08E-10
Rubidium (37)	Rb-77	9.66E+04	7.17E-06	4.86E+03	5.74E+03	2.04E+03	3.27E+03	1.90E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.51E-12	8.87E-12	3.15E-12	5.06E-12	2.94E-11
Rubidium (37)	Rb-78	2.06E+04	3.36E-05	1.36E+10	3.85E+10	1.04E+10	7.44E+09	1.09E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-04	2.83E-04	7.60E-05	5.46E-05	7.98E-04
Rubidium (37)	Rb-78m	6.35E+04	1.09E-05	2.83E+11	7.98E+11	2.15E+11	1.54E+11	2.25E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.75E-04	1.90E-03	5.12E-04	3.68E-04	5.38E-03
Rubidium (37)	Rb-79	1.59E+04	4.36E-05	2.91E+03	3.78E+03	1.50E+03	5.11E+03	2.50E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.80E-11	3.64E-11	1.44E-11	4.93E-11	2.41E-10
Rubidium (37)	Rb-80	6.54E+05	1.06E-06	1.06E+21	3.28E+21	7.78E+20	5.60E+20	8.90E+21	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.52E+05	7.79E+05	1.85E+05	1.33E+05	2.11E+06
Rubidium (37)	Rb-81	1.33E+03	5.22E-04	1.24E+02	1.83E+02	6.86E+01	1.74E+02	1.03E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.47E-11	2.17E-11	8.13E-12	2.06E-11	1.22E-10
Rubidium (37)	Rb-81m	1.19E+04	5.80E-05	1.15E+03	1.69E+03	6.33E+02	1.61E+03	9.50E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.51E-11	2.22E-11	8.33E-12	2.11E-11	1.25E-10
Rubidium (37)	Rb-82	2.86E+05	2.42E-06	7.87E+18	1.41E+19	3.93E+18	4.47E+18	4.59E+19	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.37E+03	7.83E+03	2.19E+03	2.49E+03	2.55E+04
Rubidium (37)	Rb-82m	9.38E+02	7.39E-04	6.32E+00	1.37E+01	3.79E+00	3.60E+00	4.69E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.07E-12	2.33E-12	6.44E-13	6.10E-13	7.95E-12
Rubidium (37)	Rb-83	2.93E+00	2.36E-01	2.27E-01	3.45E-01	1.31E-01	2.26E-01	1.91E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.24E-11	1.89E-11	7.20E-12	1.24E-11	1.05E-10
Rubidium (37)	Rb-84	7.72E+00	8.98E-02	4.19E-01	6.76E-01	2.58E-01	4.77E-01	3.51E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.85E-12	1.43E-11	5.44E-12	1.01E-11	7.42E-11
Rubidium (37)	Rb-84m	1.80E+04	3.85E-05	9.76E+02	1.57E+03	6.00E+02	1.11E+03	8.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.85E-12	1.43E-11	5.44E-12	1.01E-11	7.42E-11
Rubidium (37)	Rb-86	1.36E+01	5.11E-02	1.00E+02	3.00E+02	7.50E+01	6.66E+01	5.15E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.23E-09	3.69E-09	9.22E-10	8.19E-10	6.34E-09
Rubidium (37)	Rb-86m	3.58E+05	1.93E-06	2.64E+06	7.92E+06	1.98E+06	1.76E+06	1.36E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.23E-09	3.69E-09	9.22E-10	8.19E-10	6.34E-09
Rubidium (37)	Rb-87	1.41E-11	4.92E+10																	
Rubidium (37)	Rb-88	2.05E+04	3.38E-05	3.34E+11	1.11E+12	2.76E+11	2.36E+11	2.56E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.78E-03	9.22E-03	2.30E-03	1.97E-03	2.13E-02
Rubidium (37)	Rb-89	2.40E+04	2.88E-05	6.34E+09	6.16E+09	2.93E+09	3.65E+09	2.01E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.55E-05	4.43E-05	2.10E-05	2.62E-05	1.44E-05
Rubidium (37)	Rb-90	1.38E+05	5.01E-06	3.04E+11	1.96E+11	8.79E+10	1.20E+12	2.72E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.84E-04	2.47E-04	1.11E-04	1.51E-03	3.44E-04
Rubidium (37)	Rb-90m	8.47E+04	8.18E-06	1.86E+11	1.20E+11	5.38E+10	7.33E+11	1.67E+11	3.95E-02	3.95E-02	3.95E-02	3.95E-02	3.95E-02	3.95E-02	3.95E-02	3.84E-04	2.47E-04	1.11E-04	1.51E-03	3.44E-04
Rhenium (75)	Re-178	2.76E+04	2.51E-05	2.31E+04	1.75E+04	6.58E+03	2.83E+04	6.42E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.90E-10	2.19E-10	8.23E-11	3.54E-10	8.04E-10
Rhenium (75)	Re-179	1.87E+04	3.71E-05	5.65E+04	2.45E+04	1.34E+04	9.44E+04	8.87E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.05E-09	4.56E-10	2.48E-10	1.75E-09	1.65E-09
Rhenium (75)	Re-180	1.49E+05	4.44E-06	1.53E+16	1.87E+16	5.66E+15	1.16E+16	6.48E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.58E+01	4.38E+01	1.33E+01	2.72E+01	1.52E+02
Rhenium (75)	Re-181	3.05E+02	2.27E-03	1.23E+01	1.44E+01	4.67E+00	9.37E+00	4.90E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.41E-11	1.66E-11	5.38E-12	1.08E-11	5.64E-11
Rhenium (75)	Re-182	9.49E+01	7.31E-03	8.96E-01	1.10E+00	3.45E-01	7.04E-01	3.63E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.34E-12	4.11E-12	1.28E-12	2.62E-12	1.35E-11
Rhenium (75)	Re-182m	4.78E+02	1.45E-03	1.26E+01	1.51E+01	4.58E+00	9.79E+00	5.00E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.30E-12	1.12E-11	3.38E-12	7.24E-12	3.69E-11
Rhenium (75)	Re-183	3.61E+00	1.92E-01	1.51E+00	8.97E-01	4.17E-01	2.06E+00	3.66E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.49E-10	8.81E-11	4.09E-11	2.02E-10	3.60E-10
Rhenium (75)	Re-184	6.66E+00	1.04E-01	3.09E-01	3.74E-01	1.12E-01	2.31E-01	1.28E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.66E-11	2.01E-11	5.99E-12	1.42E-11	6.88E-11
Rhenium (75)	Re-184m	1.50E+00	4.63E-01	8.18E-02	8.83E-02	2.97E-02	6.81E-02	3.31E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.95E-11	2.11E-11	7.07E-12	1.63E-11	7.89E-11
Rhenium (75)	Re-186	6.80E+01	1.02E-02	1.86E+03	1.18E+03	5.25E+02	1.83E+03	2.02E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.85E-09	6.26E-09	2.79E-09	9.69E-09	1.07E-08
Rhenium (75)	Re-186m	3.47E-06	2.00E+05	7.29E+00	3.06E+00	1.76E+00	1.08E+01	1.28E+01	1.64E-01	1.59E-01	1.63E-01	1.69E-01	1.70E-01	1.70E-01	1.70E-01	7.59E-04	3.19E-04	1.84E-04	1.12E-03	1.33E-03
Rhenium (75)	Re-187	1.68E-11	4.12E+10																	
Rhenium (75)	Re-188	3.57E+02	1.94E-03	1.94E+03	1.79E+03	7.66E+02	1.27E+03	3.10E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.99E-09	1.83E-09	7.82E-10	1.29E-09	3.17E-09
Rhenium (75)	Re-188m	1.96E+04	3.54E-05	1.07E+05	9.85E+04	4.20E+04	6.95E+04	1.70E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.99E-09	1.83E-09	7.82E-10	1.29E-09	3.17E-09
Rhenium (75)	Re-189	2.50E+02	2.77E-03	1.40E+03	1.32E+03	5.12E+02	1.13E+03	3.86E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.05E-09	1.94E-09	7.52E-10	1.65E-09	5.67E-09
Rhenium (75)	Re-190	1.17E+05	5.90E-06	2.21E+15	5.11E+15	1.31E+15	1.19E+15	1.24E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.92E+00	1.60E+01	4.10E+00	3.74E+00	3.88E+01
Rhenium (75)	Re-190m	1.90E+03	3.65E-04	3.93E+01	7.68E+01	2.08E+01	2.24E+01	2.00E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.64E-12	1.49E-11	4.04E-12	4.36E-12	3.90E-11
Rhodium (45)	Rh-100	2.92E+																		

Resident 3-D BDCCs October 2024																		
Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)												
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	BDCC DL=1 (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)	BDCC DL=1 (mg/cm ²)	
Rhodium (45)	Rh-99m	1.29E+03	5.37E-04	7.72E+01	1.55E+02	3.08E+01	7.34E+01	5.76E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.15E-11	2.31E-11	4.57E-12	1.09E-11	8.57E-11
Radon (86)	Rn-207	3.94E+04	1.76E-05	3.23E+02	5.41E+02	1.61E+02	2.11E+02	1.70E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.29E-12	5.52E-12	1.65E-12	2.15E-12	1.74E-11
Radon (86)	Rn-209	1.28E+04	5.42E-05	1.04E+02	1.66E+02	4.91E+01	6.25E+01	5.21E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.31E-12	5.26E-12	1.56E-12	1.98E-12	1.65E-11
Radon (86)	Rn-210	2.53E+03	2.74E-04	9.93E+00	1.77E+01	5.28E+00	6.52E+00	5.62E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.60E-12	2.85E-12	8.51E-13	1.05E-12	9.06E-12
Radon (86)	Rn-211	4.16E+02	1.67E-03	4.83E+00	8.81E+00	2.57E+00	3.04E+00	2.82E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.76E-12	8.68E-12	2.53E-12	3.00E-12	2.78E-11
Radon (86)	Rn-212	1.52E+04	4.55E-05	2.96E+12	4.15E+12	1.46E+12	2.64E+12	1.64E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.00E-02	1.12E-01	3.95E-02	7.12E-02	4.42E-01
Radon (86)	Rn-215	9.50E+12	7.29E-14															
Radon (86)	Rn-216	4.86E+11	1.43E-12															
Radon (86)	Rn-217	4.05E+10	1.71E-11															
Radon (86)	Rn-218	6.24E+08	1.11E-09	4.92E+12	1.86E+12	1.33E+12	1.33E+13	7.99E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.33E-06	1.26E-06	9.00E-07	9.00E-06	5.41E-06
Radon (86)	Rn-219	5.52E+06	1.26E-07	7.34E+10	1.48E+11	4.40E+10	4.33E+10	3.03E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.65E-06	1.14E-05	3.39E-06	3.34E-06	2.33E-05
Radon (86)	Rn-220	3.93E+05	1.76E-06	9.48E+03	2.80E+04	7.18E+03	5.26E+03	7.80E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.03E-11	3.04E-11	7.80E-12	5.72E-12	8.47E-11
Radon (86)	Rn-222	6.62E+01	1.05E-02	2.03E+00	5.91E+00	1.47E+00	1.18E+00	1.62E+01	1.00E-08	4.96E-08	1.00E-08	1.00E-08	1.00E-08	1.32E-11	3.85E-11	9.56E-12	7.67E-12	1.06E-10
Radon (86)	Rn-223	1.50E+04	4.62E-05	6.19E+03	8.43E+03	2.90E+03	7.22E+03	2.95E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.79E-10	2.43E-10	8.38E-11	2.08E-10	8.51E-10
Ruthenium (44)	Ru-103	6.44E+00	1.08E-01	8.41E-01	2.94E+00	7.44E-01	4.90E-01	7.65E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.61E-11	9.13E-11	2.31E-11	1.52E-11	2.37E-10
Ruthenium (44)	Ru-105	1.37E+03	5.07E-04	1.07E+02	2.36E+02	5.55E+01	5.49E+01	6.60E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.59E-11	3.52E-11	8.27E-12	8.19E-12	9.83E-11
Ruthenium (44)	Ru-106	6.77E-01	1.02E+00															
Ruthenium (44)	Ru-107	9.71E+04	7.13E-06	5.63E+10	1.68E+11	4.26E+10	3.83E+10	3.26E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.20E-04	3.59E-04	9.10E-05	8.19E-05	6.97E-04
Ruthenium (44)	Ru-108	8.01E+04	8.66E-06	1.44E+16	3.39E+16	9.87E+15	7.22E+15	6.54E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.76E+01	8.87E+01	2.58E+01	1.89E+01	1.71E+02
Ruthenium (44)	Ru-92	9.98E+04	6.94E-06	1.17E+13	2.69E+13	6.73E+12	7.32E+12	6.90E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.10E-02	4.81E-02	1.20E-02	1.31E-02	1.23E-01
Ruthenium (44)	Ru-94	7.03E+03	9.86E-05	1.50E+02	3.00E+02	6.79E+01	1.08E+02	1.07E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.89E-12	7.79E-12	1.76E-12	2.79E-12	2.77E-11
Ruthenium (44)	Ru-95	3.69E+03	1.88E-04	6.19E+01	1.25E+02	2.83E+01	5.29E+01	4.85E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.09E-12	6.25E-12	1.41E-12	2.64E-12	2.42E-11
Ruthenium (44)	Ru-97	8.72E+01	7.95E-03	1.58E+01	2.80E+01	5.47E+00	2.23E+01	1.04E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.42E-11	6.05E-11	1.18E-11	4.81E-11	2.24E-10
Sulfur (16)	S-35	2.89E+00	2.40E-01															
Sulphur (16)	S-37	7.21E+04	9.61E-06	9.11E+13	4.01E+14	9.56E+13	7.07E+13	1.02E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.07E-02	3.99E-01	9.52E-02	7.04E-02	1.02E+00
Sulfur (16)	S-38	2.14E+03	3.24E-04	4.66E+01	2.10E+02	5.04E+01	4.01E+01	5.17E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.61E-12	7.24E-12	1.74E-12	1.38E-12	1.78E-11
Antimony (51)	Sb-111	2.91E+05	2.38E-06	2.40E+04	3.95E+04	9.05E+03	2.34E+04	1.26E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.78E-11	2.92E-11	6.69E-12	1.73E-11	9.32E-11
Antimony (51)	Sb-113	5.46E+04	1.27E-05	2.04E+04	3.96E+04	8.38E+03	1.60E+04	1.32E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.18E-11	1.59E-10	3.36E-11	6.44E-11	5.30E-10
Antimony (51)	Sb-114	1.04E+05	6.64E-06	1.13E+15	2.50E+15	5.78E+14	5.90E+14	7.90E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.40E+00	5.29E+00	1.23E+00	1.25E+00	1.67E+01
Antimony (51)	Sb-115	1.13E+04	6.11E-05	5.13E+02	1.22E+03	2.40E+02	4.30E+02	4.29E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.01E-11	2.41E-11	4.72E-12	8.46E-12	8.44E-11
Antimony (51)	Sb-116	2.31E+04	3.01E-05	6.73E+10	1.39E+11	3.09E+10	4.11E+10	4.91E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.58E-04	1.35E-03	3.01E-04	4.01E-04	4.79E-03
Antimony (51)	Sb-116m	6.04E+03	1.15E-04	3.54E+01	6.67E+01	1.57E+01	2.19E+01	2.24E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.32E-12	2.49E-12	5.84E-13	8.16E-13	8.34E-12
Antimony (51)	Sb-117	2.17E+03	3.20E-04	5.30E+02	9.01E+02	1.76E+02	6.31E+02	3.07E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.55E-11	9.43E-11	1.84E-11	6.61E-11	3.2E-10
Antimony (51)	Sb-118	1.01E+05	6.85E-06	3.04E+16	7.00E+16	1.13E+16	8.22E+16	3.14E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.89E+01	1.58E+02	2.56E+01	1.86E+02	7.10E+02
Antimony (51)	Sb-118m	1.21E+03	5.71E-04	6.46E+00	1.46E+01	3.14E+00	5.76E+00	5.23E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.22E-12	2.74E-12	5.91E-13	1.09E-12	9.86E-12
Antimony (51)	Sb-119	1.59E+02	4.36E-03	7.17E+03	3.61E+03	1.54E+03	1.99E+04	4.48E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.04E-08	5.25E-09	2.23E-09	2.89E-08	6.51E-09
Antimony (51)	Sb-120	2.29E+04	3.02E-05	5.23E+11	1.26E+12	1.93E+11	1.63E+12	5.99E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.31E-03	1.28E-02	1.96E-03	1.65E-02	6.08E-02
Antimony (51)	Sb-120m	4.39E+01	1.58E-02	3.22E-01	6.11E-01	1.40E-01	2.40E-01	1.87E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.71E-12	3.24E-12	7.43E-13	1.27E-12	9.91E-12
Antimony (51)	Sb-122	9.29E+01	7.46E-03	1.91E+01	5.57E+01	1.38E+01	9.15E+00	1.38E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.88E-11	1.42E-10	3.53E-11	2.33E-11	3.51E-10
Antimony (51)	Sb-122m	8.69E+04	7.97E-06	1.79E+04	5.21E+04	1.29E+04	8.56E+03	1.29E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.87E-11	1.42E-10	3.53E-11	2.33E-11	3.51E-10
Antimony (51)	Sb-124	4.20E+00	1.65E-01	7.95E-02	2.75E-01	6.39E-02	4.48E-02	7.49E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.55E-12	1.58E-11	3.66E-12	2.57E-12	4.29E-11
Antimony (51)	Sb-124m	2.35E+05	2.95E-06	5.93E+03	2.05E+04	4.76E+03	3.34E+03	5.59E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.07E-12	2.10E-11	4.88E-12	3.42E-12	5.72E-11
Antimony (51)	Sb-124n	1.80E+04	3.84E-05	4.55E+02	1.58E+03	3.65E+02	2.57E+02	4.29E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.07E-12	2.10E-11	4.87E-12	3.42E-12	5.72E-11
Antimony (51)	Sb-125	2.51E-01	2.76E+00	1.22E-01	2.70E-01	5.75E-02	1.05E-01	9.11E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.18E-10	2.61E-10	5.55E-11	1.01E-10	8.79E-10
Antimony (51)	Sb-126	2.05E+01	3.38E-02	1.21E-01	3.62E-01	8.54E-02	6.27E-02	1.01E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.44E-12	4.32E-12	1.02E-12	7.49E-13	1.21E-11
Antimony (51)	Sb-126m	1.90E+04	3.64E-05	7.99E+02	2.40E+03	5.68E+02	4.16E+02	6.70E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.03E-11	3.08E-11	7.27E-12	5.34E-12	8.61E-11
Antimony (51)	Sb-127	6.57E+01	1.05E-02	6.														

Resident 3-D BDCCs October 2024																			
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)															
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	
				BDCC	1cm	5cm	15cm	Plane	Start Time	Start Time	Start Time	Start Time	External	External	External	External	BDCC	1cm	5cm
				DL=1	DL=1	DL=1	DL=1	DL=1	External	External	External	External	External	DL=1	DL=1	DL=1	DL=1	DL=1	DL=1
				(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/cm ²)	(yrs)	(yrs)	(yrs)	(yrs)	(yrs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/cm ²)	(mg/cm ²)
Selenium (34)	Se-75	2.11E+00	3.28E-01	2.39E-01	2.33E-01	9.10E-02	2.06E-01	1.04E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.64E-11	1.60E-11	6.27E-12	1.42E-11	7.19E-11	
Selenium (34)	Se-77m	1.26E+06	5.50E-07	4.51E+24	1.62E+24	3.84E+24	3.74E+24	2.01E+25	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.35E+08	4.56E+08	1.92E+08	4.44E+08	2.38E+09	
Selenium (34)	Se-79	2.35E-06	2.95E+05																
Selenium (34)	Se-79m	9.29E+04	7.46E-06	2.87E+17	1.98E+17	9.15E+16	6.95E+17	1.44E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.74E+02	3.27E+02	1.51E+02	1.15E+03	2.38E+03	
Selenium (34)	Se-81	1.97E+04	3.51E-05	3.63E+14	6.90E+14	2.40E+14	2.26E+14	3.38E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.89E+00	5.49E+00	1.91E+00	1.80E+00	2.69E+00	
Selenium (34)	Se-81m	6.36E+03	1.09E-04	4.75E+04	3.52E+04	1.58E+04	1.08E+05	2.28E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.17E+09	8.70E+10	3.90E+10	2.66E+09	5.64E+09	
Selenium (34)	Se-83	1.63E+04	4.24E-05	1.03E+07	2.45E+07	8.04E+06	5.68E+06	1.71E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.02E-07	2.42E-07	7.92E-08	5.60E-08	1.68E-07	
Selenium (34)	Se-83m	3.12E+05	2.22E-06	2.04E+08	4.83E+08	1.60E+08	1.13E+08	3.27E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.06E-07	2.50E-07	8.26E-08	5.81E-08	1.69E-07	
Selenium (34)	Se-84	1.17E+05	5.90E-06	4.01E+07	1.25E+08	2.94E+07	2.44E+07	3.35E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.56E-08	1.73E-07	4.07E-08	3.39E-08	4.64E-07	
Silicon (14)	Si-31	2.32E+03	2.99E-04	7.63E+07	7.22E+07	3.22E+07	3.17E+07	2.60E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.98E-06	1.88E-06	8.37E-07	8.24E-07	6.76E-07	
Silicon (14)	Si-32	5.25E-03	1.32E+02																
Samarium (62)	Sm-139	1.42E+05	4.89E-06	2.54E+04	6.88E+04	1.30E+04	4.92E+04	1.82E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.84E-11	1.31E-10	2.48E-11	9.37E-11	3.46E-10	
Samarium (62)	Sm-140	2.46E+04	2.82E-05	3.31E+03	1.16E+04	2.08E+04	1.26E+04	3.53E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.66E-11	1.28E-10	2.30E-11	1.39E-10	3.91E-10	
Samarium (62)	Sm-141	3.57E+04	1.94E-05	2.47E+04	7.49E+04	1.61E+04	9.52E+04	2.29E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.89E-10	5.74E-10	1.23E-10	7.30E-10	1.75E-09	
Samarium (62)	Sm-141m	1.61E+04	4.30E-05	1.11E+04	3.38E+04	7.26E+03	4.30E+04	1.03E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.89E-10	5.74E-10	1.23E-10	7.30E-10	1.75E-09	
Samarium (62)	Sm-142	5.02E+03	1.38E-04	6.03E+02	1.79E+03	3.98E+02	1.95E+03	6.11E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.31E-11	9.83E-11	2.18E-11	1.07E-10	3.35E-10	
Samarium (62)	Sm-143	4.16E+04	1.66E-05	7.63E+03	2.30E+04	4.67E+03	1.42E+04	7.69E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.09E-11	1.53E-10	3.11E-11	9.46E-11	5.12E-10	
Samarium (62)	Sm-143m	3.31E+05	2.09E-06	6.07E+04	1.83E+05	3.71E+04	1.13E+05	6.11E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.09E-11	1.53E-10	3.11E-11	9.46E-11	5.12E-10	
Samarium (62)	Sm-145	7.44E-01	9.32E-01	2.90E+00	2.57E+00	1.14E+00	9.29E+00	5.58E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.10E-09	9.72E-10	4.31E-10	3.51E-09	2.11E-09	
Samarium (62)	Sm-146	6.73E-09	1.03E+08																
Samarium (62)	Sm-147	6.54E-12	1.06E+11																
Samarium (62)	Sm-148	9.90E-17	7.00E+15																
Samarium (62)	Sm-151	7.70E-03	9.00E+01	2.02E+08	3.81E+07	4.02E+07	3.96E+08	5.52E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.67E+00	1.45E+00	1.53E+00	1.51E+01	2.10E+00	
Samarium (62)	Sm-153	1.31E+02	5.31E-03	2.31E+02	3.01E+02	9.20E+01	4.74E+02	6.97E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.26E-10	6.84E-10	2.09E-10	1.08E-09	1.59E-09	
Samarium (62)	Sm-155	1.63E+04	4.24E-05	4.16E+05	4.11E+05	1.23E+05	4.52E+05	9.38E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.65E-09	7.56E-09	2.26E-09	8.33E-09	1.73E-08	
Samarium (62)	Sm-156	6.46E+02	1.07E-03	3.20E+01	7.30E+01	1.70E+01	1.88E+01	2.05E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.50E-11	3.42E-11	7.96E-12	8.79E-12	9.61E-11	
Samarium (62)	Sm-157	4.54E+04	1.53E-05	7.89E+03	1.32E+04	3.22E+03	8.39E+03	3.50E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.30E-11	8.89E-11	2.16E-11	5.63E-11	2.35E-10	
Tin (50)	Sn-106	1.90E+05	3.65E-06	7.45E+13	2.38E+14	5.39E+13	4.32E+13	6.81E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.08E-02	2.58E-01	5.84E-02	4.69E-02	7.38E-01	
Tin (50)	Sn-108	3.54E+04	1.96E-05	4.82E+02	1.21E+03	2.64E+02	2.95E+02	4.01E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.86E-12	7.18E-12	1.56E-12	1.75E-12	2.38E-11	
Tin (50)	Sn-109	2.02E+04	3.42E-05	1.08E+03	2.21E+03	4.54E+02	1.18E+03	7.44E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.13E-11	2.31E-11	4.74E-12	1.24E-11	7.78E-11	
Tin (50)	Sn-110	1.48E+03	4.69E-04	3.80E+01	8.52E+01	1.79E+01	2.39E+01	2.92E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.49E-12	1.23E-11	2.59E-12	3.46E-12	4.21E-11		
Tin (50)	Sn-111	1.03E+04	6.72E-05	5.10E+02	9.68E+02	1.97E+02	6.74E+02	3.42E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.07E-11	2.02E-11	4.12E-12	1.41E-11	7.14E-11		
Tin (50)	Sn-113	2.20E+00	3.15E-01	8.04E-01	1.56E+00	3.31E-01	6.33E-01	5.21E+00	1.25E-05	1.93E-05	1.85E-05	1.93E-05	8.02E-11	1.56E-10	3.30E-11	6.31E-11	5.20E-10		
Tin (50)	Sn-113m	1.70E+04	4.07E-05	6.83E+03	1.33E+04	2.81E+03	5.37E+03	4.42E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.80E-11	1.71E-10	3.62E-11	6.92E-11	5.70E-10		
Tin (50)	Sn-117m	1.84E+01	3.77E-02	6.46E+00	9.79E+00	2.09E+00	6.54E+00	3.31E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.98E-11	1.21E-10	2.58E-11	8.08E-11	4.09E-10		
Tin (50)	Sn-119m	8.63E-01	8.03E-01	1.65E+02	8.05E+01	3.53E+01	4.48E+02	9.78E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.41E-08	2.15E-08	9.44E-09	1.20E-07	2.62E-08		
Tin (50)	Sn-121	2.25E+02	3.09E-03																
Tin (50)	Sn-121m	1.58E-02	4.39E+01	6.54E+02	3.62E+02	1.70E+02	1.87E+03	5.28E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.73E-06	5.39E-06	2.53E-06	2.77E-05	7.85E-06	
Tin (50)	Sn-123	1.96E+00	3.54E-01	2.53E+03	5.37E+03	1.69E+03	1.60E+03	2.96E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.08E-07	6.55E-07	2.06E-07	1.95E-07	3.61E-07	
Tin (50)	Sn-123m	9.09E+03	7.62E-05	8.34E+03	9.70E+03	3.14E+03	3.80E+03	2.10E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.19E-10	2.55E-10	8.25E-11	9.97E-11	5.50E-10	
Tin (50)	Sn-125	2.62E+01	2.64E-02	7.26E+00	1.80E+01	4.02E+00	5.28E+00	5.16E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.71E-11	1.66E-10	3.72E-11	4.88E-11	4.77E-10	
Tin (50)	Sn-125m	3.83E+04	1.81E-05	1.86E+04	4.12E+04	8.75E+03	1.60E+04	1.39E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.18E-10	2.61E-10	5.55E-11	1.01E-10	8.79E-10	
Tin (50)	Sn-126	3.01E-06	2.30E+05	1.24E-02	3.63E-02	8.80E-03	6.39E-03	9.85E-02	5.48E-01	5.47E-01	5.48E-01	5.48E-01	1.00E-06	2.95E-06	7.14E-07	5.19E-07	8.00E-06		
Tin (50)	Sn-127	2.89E+03	2.40E-04	4.52E+01	1.20E+02	2.89E+01	2.52E+01	3.33E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.85E-12	1.02E-11	2.46E-12	2.15E-12	2.84E-11		
Tin (50)	Sn-127m	8.82E+04	7.86E-06	8.13E+03	2.07E+04	5.01E+03	4.05E+03	5.71E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.27E-11	5.78E-11	1.40E-11	1.13E-11	1.60E-10		
Tin (50)	Sn-128	6.17E+03	1.12E-04	5.65E+01	1.44E+02	3.12E+01	3.57E+01	3.98E+02	1.00E-08	1.00E-08	1.								

Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)														
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume BDCC DL=1 (pCi/g)	Soil Volume 1cm BDCC DL=1 (pCi/g)	Soil Volume 5cm BDCC DL=1 (pCi/g)	Soil Volume 15cm BDCC DL=1 (pCi/g)	Ground Plane BDCC DL=1 (pCi/cm ²)	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume BDCC DL=1 (mg/kg)	Soil Volume 1cm BDCC DL=1 (mg/kg)	Soil Volume 5cm BDCC DL=1 (mg/kg)	Soil Volume 15cm BDCC DL=1 (mg/kg)	Ground Plane BDCC DL=1 (mg/cm ²)
									Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)					
Tantalum (73)	Ta-176	7.50E+02	9.24E-04	1.05E+01	1.61E+01	4.16E+00	7.06E+00	5.07E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.76E-12	7.35E-12	1.89E-12	3.21E-12	2.31E-11
Tantalum (73)	Ta-177	1.07E+02	6.46E-03	3.12E+02	1.60E+02	6.67E+01	3.38E+02	5.08E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.98E-10	5.13E-10	2.13E-10	1.08E-09	1.63E-09
Tantalum (73)	Ta-178	3.91E+04	1.77E-05	4.17E+14	3.27E+14	1.20E+14	5.06E+14	1.18E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.68E+00	2.89E+00	1.06E+00	4.47E+00	1.04E+01
Tantalum (73)	Ta-178m	2.57E+03	2.69E-04	4.30E+01	6.22E+01	1.74E+01	3.09E+01	1.84E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.77E-12	8.35E-12	2.33E-12	4.15E-12	2.20E-11
Tantalum (73)	Ta-179	3.81E-01	1.82E+00	2.14E+01	7.42E+00	4.36E+00	2.81E+01	2.82E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.95E-08	6.77E-09	3.98E-09	2.56E-08	2.57E-08
Tantalum (73)	Ta-180	7.45E+02	9.31E-04	4.68E+03	1.82E+03	8.84E+02	5.11E+03	5.71E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.19E-09	8.56E-10	4.15E-10	2.40E-09	2.68E-09
Tantalum (73)	Ta-182	2.21E+00	3.14E-01	7.27E-02	1.10E-01	3.02E-02	4.78E-02	3.25E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.16E-11	1.75E-11	4.82E-12	7.64E-12	5.19E-11
Tantalum (73)	Ta-182m	2.30E+04	3.01E-05	7.57E+02	1.14E+03	3.14E+02	4.97E+02	3.38E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.16E-11	1.75E-11	4.82E-12	7.64E-12	5.19E-11
Tantalum (73)	Ta-183	4.96E+01	1.40E-02	7.51E+00	6.02E+00	2.41E+00	7.57E+00	2.41E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.38E-11	4.31E-11	1.73E-11	5.42E-11	1.73E-10
Tantalum (73)	Ta-184	6.98E+02	9.93E-04	9.75E+00	1.78E+01	5.02E+00	6.23E+00	5.15E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.99E-12	9.10E-12	2.57E-12	3.19E-12	2.63E-11
Tantalum (73)	Ta-185	7.37E+03	9.40E-05	3.75E+03	2.67E+03	1.18E+03	3.92E+03	8.01E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.83E-10	1.30E-10	5.75E-11	1.91E-10	3.90E-10
Tantalum (73)	Ta-186	3.47E+04	2.00E-05	7.75E+11	1.54E+12	3.95E+11	4.38E+11	3.78E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.06E-03	1.60E-02	4.11E-03	4.55E-03	3.94E-02
Terbium (65)	Tb-146	9.50E+05	7.29E-07	7.95E+03	1.89E+04	3.86E+03	4.75E+03	5.27E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.37E-12	5.63E-12	1.15E-12	1.42E-12	1.57E-11
Terbium (65)	Tb-147	3.70E+03	1.87E-04	2.50E+01	5.38E+01	1.15E+01	1.73E+01	1.49E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.92E-12	4.15E-12	8.83E-13	1.33E-12	1.15E-11
Terbium (65)	Tb-147m	1.95E+05	3.56E-06	2.52E+03	5.75E+03	1.21E+03	2.06E+03	1.57E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.69E-12	8.42E-12	1.78E-12	3.02E-12	2.30E-11
Terbium (65)	Tb-148	6.07E+03	1.14E-04	1.05E+02	2.27E+02	4.85E+01	5.67E+01	6.32E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.95E-12	1.07E-11	2.30E-12	2.68E-12	2.99E-11
Terbium (65)	Tb-148m	1.66E+05	4.19E-06	6.05E+15	1.40E+16	3.14E+15	3.24E+15	3.91E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.05E+01	2.43E+01	5.46E+00	5.62E+00	6.77E+01
Terbium (65)	Tb-149	1.47E+03	4.70E-04	2.22E+01	4.94E+01	1.07E+01	1.84E+01	1.34E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.35E-12	9.69E-12	2.09E-12	3.60E-12	2.63E-11
Terbium (65)	Tb-149m	8.76E+04	7.91E-06	4.50E+03	9.04E+03	2.17E+03	5.23E+03	2.63E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.48E-11	2.99E-11	7.18E-12	1.73E-11	8.68E-11
Terbium (65)	Tb-150	1.74E+03	3.97E-04	2.25E+01	5.31E+01	1.09E+01	1.30E+01	1.50E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.75E-12	8.86E-12	1.82E-12	2.16E-12	2.50E-11
Terbium (65)	Tb-150m	6.28E+04	1.10E-05	9.62E+14	2.25E+15	4.99E+14	4.82E+14	6.08E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.46E+00	1.04E+01	2.31E+00	2.23E+00	2.82E+01
Terbium (65)	Tb-151	3.45E+02	2.01E-03	8.52E+00	1.66E+01	3.59E+00	6.51E+00	4.43E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.24E-12	1.41E-11	3.05E-12	5.54E-12	3.76E-11
Terbium (65)	Tb-151m	8.74E+05	7.93E-07	2.31E+04	4.49E+04	9.73E+03	1.77E+04	1.20E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.74E-12	1.51E-11	3.26E-12	5.92E-12	4.02E-11
Terbium (65)	Tb-152	3.47E+02	2.00E-03	7.78E+00	1.86E+01	3.86E+00	5.84E+00	4.85E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.62E-12	1.58E-11	3.29E-12	4.97E-12	4.12E-11
Terbium (65)	Tb-152m	8.67E+04	7.99E-06	2.46E+03	5.88E+03	1.22E+03	1.85E+03	1.53E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.37E-12	2.00E-11	4.15E-12	6.28E-12	5.21E-11
Terbium (65)	Tb-153	1.08E+02	6.41E-03	1.03E+01	1.77E+01	4.40E+00	1.48E+01	5.10E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.84E-11	4.86E-11	1.21E-11	4.05E-11	1.40E-10
Terbium (65)	Tb-154	2.82E+02	2.45E-03	3.03E+00	7.67E+00	1.58E+00	2.63E+00	2.21E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.21E-12	8.12E-12	1.67E-12	2.78E-12	2.33E-11
Terbium (65)	Tb-155	4.75E+01	1.46E-02	1.35E+01	1.84E+01	4.98E+00	2.06E+01	4.82E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.55E-11	1.16E-10	3.15E-11	1.30E-10	3.05E-10
Terbium (65)	Tb-156	4.73E+01	1.47E-02	5.19E-01	1.07E+00	2.26E-01	3.52E-01	2.88E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.32E-12	6.82E-12	1.45E-12	2.25E-12	1.85E-11
Terbium (65)	Tb-156m	2.49E+02	2.79E-03	2.73E+00	5.59E+00	1.19E+00	1.85E+00	1.51E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.32E-12	6.80E-12	1.45E-12	2.25E-12	1.84E-11
Terbium (65)	Tb-156n	1.15E+03	6.05E-04	1.26E+01	2.58E+01	5.49E+00	8.53E+00	6.98E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.32E-12	6.82E-12	1.45E-12	2.25E-12	1.85E-11
Terbium (65)	Tb-157	9.76E-03	7.10E+01	2.36E+02	8.43E+01	5.98E+01	5.08E+02	3.29E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.36E-06	2.63E-06	1.87E-06	1.59E-05	1.03E-05
Terbium (65)	Tb-158	3.85E-03	1.80E+02	3.90E-02	8.58E-02	1.88E-02	4.51E-02	2.55E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.11E-09	6.84E-09	1.50E-09	3.59E-09	2.03E-08
Terbium (65)	Tb-160	3.50E+00	1.98E-01	1.53E-01	3.14E-01	7.45E-02	9.46E-02	8.78E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.36E-11	2.79E-11	6.61E-12	8.40E-12	7.79E-11
Terbium (65)	Tb-161	3.86E+01	1.89E-02	2.51E+02	1.62E+02	6.50E+01	4.85E+02	4.46E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.14E-09	1.38E-09	5.54E-10	4.13E-09	3.80E-09
Terbium (65)	Tb-162	4.79E+04	1.45E-05	1.94E+13	4.10E+13	1.00E+13	1.23E+13	1.10E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.27E-01	2.69E-01	6.58E-02	8.09E-02	7.25E-01
Terbium (65)	Tb-163	1.87E+04	3.71E-05	2.17E+10	5.68E+10	1.53E+10	1.24E+10	1.39E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.67E-04	9.62E-04	2.59E-04	2.09E-04	2.35E-03
Terbium (65)	Tb-164	1.21E+05	5.71E-06	2.02E+15	4.63E+15	1.09E+15	1.12E+15	1.23E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.29E+00	1.21E+01	2.85E+00	2.94E+00	3.22E+01
Terbium (65)	Tb-165	1.73E+05	4.01E-06	4.08E+06	4.62E+06	1.19E+06	3.73E+06	5.19E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.57E-09	8.57E-09	2.21E-09	6.92E-09	9.62E-09
Technetium (43)	Tc-101	2.57E+04	2.70E-05	4.56E+12	1.40E+13	3.51E+12	3.20E+12	2.63E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.48E-02	1.07E-01	2.68E-02	2.44E-02	2.01E-01
Technetium (43)	Tc-102	4.14E+06	1.67E-07	2.94E+27	6.74E+27	2.32E+27	1.59E+27	9.85E+27	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.40E+11	3.22E+11	1.11E+11	7.59E+10	4.71E+11
Technetium (43)	Tc-102m	8.37E+04	8.28E-06	1.65E+14	5.01E+14	1.27E+14	8.61E+13	1.33E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.90E-01	1.19E+00	2.99E-01	2.03E-01	3.14E+00
Technetium (43)	Tc-104	1.99E+04	3.48E-05	1.54E+10	4.75E+10	1.21E+10	9.08E+09	1.14E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.56E-04	4.81E-04	1.22E-04	9.21E-05	1.15E-03
Technetium (43)	Tc-105	4.79E+04	1.45E-05	3.74E+03	8.29E+03	1.95E+03	1.93E+03	2.31E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.59E-11	3.52E-11	8.27E-12	8.19E-12	9.83E-11
Technetium (43)	Tc-91	1.16E+05	5.97E-06	6.09E+07	1.26E+08	2.66E+07	2.48E+08	7.98E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.27E-08	1.92E-07	4.05E-08	3.78E-07	1.21E-06
Technetium (43)	Tc-91m	1.10E+05	6.28E-06	4.62E+05	9.63E+05	2.02E+05	1.88E+06	6.28E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.39E-10	1.54E-09	3.24E-10	3.01E-09	1.00E-08
Technetium (43)	Tc-92	8.57E+04	8.09E-06	7.21E+13	1.65E+14	4.15E+13	4.50E+13	4.25E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.50E-01	3.45E-01	8.64E-02	9.38E-02	8.85E-01
Technetium (43)	Tc-93	2.21E+03	3.14E-04	4.97E+01	1.09E+02	2.47E+01	5.41E+01	4.83E+02	1.00E-08	1.00E-08								

Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)												
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	BDCC DL=1 (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)	BDCC DL=1 (mg/cm ²)	
Tellurium (52)	Te-119m	5.38E+01	1.29E-02	9.31E-01	1.93E+00	4.30E-01	7.71E-01	6.22E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.99E-12	8.27E-12	1.84E-12	3.31E-12	2.67E-11
Tellurium (52)	Te-121	1.32E+01	5.25E-02	7.78E-01	1.76E+00	3.47E-01	7.00E-01	6.68E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.38E-11	3.14E-11	6.16E-12	1.24E-11	1.19E-10
Tellurium (52)	Te-121m	1.64E+00	4.22E-01	1.10E-01	2.41E-01	4.79E-02	1.06E-01	8.65E-01	3.81E-04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.57E-11	3.44E-11	6.85E-12	1.52E-11	1.24E-10
Tellurium (52)	Te-123	1.16E-15	6.00E+14	6.24E+05	1.06E+05	1.23E+05	1.07E+06	2.68E+05	1.15E-05	6.15E-07	1.19E-03	8.63E-06	2.02E-07	1.29E+11	2.20E+10	2.54E+10	2.22E+11	5.55E+10
Tellurium (52)	Te-123m	2.12E+00	3.27E-01	1.11E+00	1.67E+00	4.42E-01	9.54E-01	5.24E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.25E-10	1.88E-10	4.97E-11	1.07E-10	5.90E-10
Tellurium (52)	Te-125m	4.41E+00	1.57E-01	5.75E+01	3.81E+01	1.72E+01	1.79E+02	5.29E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.17E-09	2.10E-09	9.45E-10	9.84E-09	2.91E-09
Tellurium (52)	Te-127	6.49E+02	1.07E-03	8.81E+05	1.84E+06	4.98E+05	4.74E+05	2.32E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.34E-07	6.98E-07	1.89E-07	1.80E-07	8.80E-07
Tellurium (52)	Te-127m	2.32E+00	2.99E-01	2.66E+02	1.96E+02	8.31E+01	5.92E+02	2.81E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.82E-08	2.09E-08	8.82E-09	6.29E-08	2.98E-08
Tellurium (52)	Te-129	5.23E+03	1.32E-04	1.30E+04	2.62E+04	5.95E+03	2.15E+04	5.88E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.21E-10	1.25E-09	2.85E-10	1.03E-09	2.81E-09
Tellurium (52)	Te-129m	7.53E+00	9.21E-02	1.39E+01	3.05E+01	6.53E+00	3.00E+01	7.27E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.63E-10	1.01E-09	2.17E-10	9.98E-10	2.42E-09
Tellurium (52)	Te-131	1.46E+04	4.76E-05	1.56E+03	1.51E+04	4.01E+03	3.40E+03	1.61E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.71E-11	2.64E-10	6.99E-11	5.94E-11	2.81E-10
Tellurium (52)	Te-131m	2.02E+02	3.42E-03	4.21E+00	1.02E+01	2.33E+00	2.76E+00	2.73E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.29E-12	1.28E-11	2.92E-12	3.46E-12	3.43E-11
Tellurium (52)	Te-132	7.89E+01	8.78E-03	7.73E-01	2.26E+00	5.10E-01	4.20E-01	6.42E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.51E-12	7.32E-12	1.65E-12	1.36E-12	2.08E-11
Tellurium (52)	Te-133	2.91E+04	2.38E-05	2.94E+03	9.27E+03	2.37E+03	1.61E+03	2.31E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.60E-11	8.21E-11	2.10E-11	1.43E-11	2.05E-10
Tellurium (52)	Te-133m	6.57E+03	1.05E-04	8.70E+01	2.21E+02	5.13E+01	5.14E+01	6.14E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.42E-12	8.69E-12	2.01E-12	2.02E-12	2.41E-11
Tellurium (52)	Te-134	8.71E+03	7.95E-05	6.82E+01	1.77E+02	4.10E+01	3.87E+01	4.89E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.04E-12	5.27E-12	1.22E-12	1.16E-12	1.46E-11
Thorium (90)	Th-223	3.64E+07	1.90E-08	1.01E+32	1.32E+32	4.44E+31	9.77E+31	4.42E+32	7.94E-06	3.98E-06	6.31E-06	7.94E-06	6.31E-06	1.20E+15	1.57E+15	5.28E+14	1.16E+15	5.25E+15
Thorium (90)	Th-224	2.08E+07	3.33E-08	2.69E+32	3.41E+32	1.10E+32	2.44E+32	1.21E+33	6.31E-06	6.31E-06	6.31E-06	6.31E-06	5.01E-06	5.62E+15	7.11E+15	2.30E+15	5.10E+15	2.53E+16
Thorium (90)	Th-226	1.19E+04	5.82E-05	9.29E+07	3.54E+07	2.51E+07	2.49E+08	1.52E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.42E-06	1.30E-06	9.25E-07	9.18E-06	5.60E-06
Thorium (90)	Th-227	1.35E+01	5.12E-02	2.50E+00	3.25E+00	1.08E+00	3.88E+00	1.44E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.15E-11	1.06E-10	3.51E-11	1.26E-10	4.69E-10
Thorium (90)	Th-228	3.63E+01	1.91E+00	2.89E-02	8.54E-02	2.19E-02	1.61E-02	2.38E-01	1.94E-02	1.93E-02	1.94E-02	1.94E-02	1.93E-02	3.53E-11	1.04E-10	2.67E-11	1.96E-11	2.90E-10
Thorium (90)	Th-229	9.44E-05	7.34E+03	2.23E-01	2.88E-01	9.93E-02	2.29E-01	1.15E+00	5.61E-01	5.38E-01	5.43E-01	5.96E-01	5.01E-01	1.05E-06	1.35E-06	4.67E-07	1.08E-06	5.40E-06
Thorium (90)	Th-230	9.19E+06	7.54E+04	3.33E-02	9.69E-02	2.41E-02	1.93E-02	2.66E-01	8.94E+03	8.94E+03	8.94E+03	8.94E+03	8.94E+03	1.62E-06	4.70E-06	1.17E-06	9.38E-07	1.29E-05
Thorium (90)	Th-231	2.38E+02	2.91E-03	1.12E+03	9.73E+02	3.62E+02	3.33E+03	4.52E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.11E-09	1.83E-09	6.83E-10	6.27E-09	8.52E-09
Thorium (90)	Th-232	4.93E-11	1.41E+10	1.59E-02	3.91E-02	1.05E-02	1.02E-02	1.23E-01	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.45E-01	3.57E-01	9.57E-02	9.33E-02	1.12E+00
Thorium (90)	Th-233	1.63E+04	4.24E-05	3.01E+03	4.21E+03	1.24E+03	4.65E+03	1.89E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.33E-11	1.17E-10	3.44E-11	1.29E-10	5.22E-10
Thorium (90)	Th-234	1.05E+01	6.60E-02	6.35E+01	9.49E+01	2.85E+01	6.92E+01	3.13E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.75E-09	4.11E-09	1.23E-09	2.99E-09	1.35E-08
Thorium (90)	Th-235	5.13E+04	1.35E-05	2.45E+12	7.55E+11	6.38E+11	4.36E+12	6.84E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.18E-02	6.71E-03	5.67E-03	3.88E-02	6.08E-03
Thorium (90)	Th-236	9.71E+03	7.13E-05	4.82E+02	9.41E+02	2.61E+02	3.79E+02	3.42E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.27E-11	4.44E-11	1.23E-11	1.79E-11	1.61E-10
Titanium (22)	Ti-44	1.16E-02	6.00E+01	3.10E-02	7.88E-02	1.96E-02	1.74E-02	2.21E-01	2.89E-03	2.84E-03	2.87E-03	2.91E-03	2.81E-03	2.29E-10	5.82E-10	1.45E-10	1.29E-10	1.64E-09
Titanium (22)	Ti-45	1.97E+03	3.52E-04	5.86E+03	4.69E+03	1.99E+03	9.98E+03	4.06E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.60E-10	2.08E-10	8.83E-11	4.42E-10	1.80E-09
Titanium (22)	Ti-51	6.32E+04	1.10E-05	4.20E+15	1.44E+16	3.58E+15	3.01E+15	2.27E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.57E+00	2.26E+01	5.61E+00	4.70E+00	3.55E+01
Titanium (22)	Ti-52	2.14E+05	3.23E-06	5.02E+15	1.42E+16	3.40E+15	2.96E+15	3.78E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.37E+00	6.67E+00	1.60E+00	1.39E+00	1.78E+01
Thallium (81)	Tl-190	1.40E+05	4.95E-06	1.53E+03	3.27E+03	9.06E+02	1.12E+03	9.20E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.02E-12	8.61E-12	2.39E-12	2.95E-12	2.42E-11
Thallium (81)	Tl-190m	9.84E+04	7.04E-06	1.07E+03	2.30E+03	6.37E+02	7.88E+02	6.47E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.02E-12	8.61E-12	2.39E-12	2.95E-12	2.42E-11
Thallium (81)	Tl-194	1.10E+04	6.28E-05	6.37E+02	9.69E+02	3.04E+02	3.76E+02	2.78E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.17E-11	3.30E-11	1.04E-11	1.28E-11	9.47E-11
Thallium (81)	Tl-194m	1.11E+04	6.24E-05	7.17E+01	1.31E+02	3.71E+01	3.90E+01	3.89E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.43E-12	4.42E-12	1.26E-12	1.32E-12	1.32E-11
Thallium (81)	Tl-195	5.23E+03	1.32E-04	1.09E+02	1.43E+02	5.35E+01	1.07E+02	5.97E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.86E-12	1.04E-11	3.86E-12	7.77E-12	4.32E-11
Thallium (81)	Tl-196	3.30E+03	2.10E-04	5.52E+01	9.89E+01	2.94E+01	3.39E+01	2.94E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.37E-12	1.14E-11	3.39E-12	3.90E-12	3.39E-11
Thallium (81)	Tl-197	2.14E+03	3.24E-04	2.00E+02	2.22E+02	8.55E+01	1.97E+02	8.17E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.58E-11	3.98E-11	1.53E-11	3.52E-11	1.46E-10
Thallium (81)	Tl-198	1.15E+03	6.05E-04	1.64E+01	2.89E+01	8.50E+00	1.00E+01	8.73E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.49E-12	9.68E-12	2.85E-12	3.35E-12	2.93E-11
Thallium (81)	Tl-198m	3.25E+03	2.13E-04	4.06E+01	6.36E+01	1.96E+01	2.37E+01	2.02E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.80E-12	7.53E-12	2.32E-12	2.80E-12	2.40E-11
Thallium (81)	Tl-199	8.18E+02	8.47E-04	1.76E+02	1.76E+02	6.85E+01	1.85E+02	6.54E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.30E-11	8.28E-11	3.23E-11	8.74E-11	3.09E-10
Thallium (81)	Tl-200	2.33E+02	2.98E-03	5.71E+00	9.27E+00	2.76E+00	3.52E+00	2.75E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.52E-12	1.55E-11	4.61E-12	5.87E-12	4.59E-11
Thallium (81)	Tl-201	8.33E+01	8.32E-03	8.19E+01	5.25E+01	2.41E+01	1.25E+02	2.13E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.83E-10	2.46E-10	1.13E-10	5.88E-10	9.96E-10
Thallium (81)	Tl-202	2.07E+01	3.35E-02	2.25E+00	2.85E+00	9.95E-01	1.54E+00	9.08E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.27E-11	5.40E-11	1.89E-11	2.91E-11	1.72E-10
Thallium (81)	Tl-204	1.83E-01	3.78E+00	3.16E+03	1.87E+03	1.00E+03	6.05E+03	1.22E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.80E-06	4.03E-06	2.17E-06	1.31E-05	2.64E-06
Thallium (81)	Tl-206	8.67E+04	7.99E-06	3.15E+20	1.35E+20	9.97E+19	4.56E+20											

Resident 3-D BDCCs October 2024																			
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)															
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	External Exposure Dose (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)	BDCC DL=1 (mg/cm ²)		
Ytterbium (70)	Yb-164	4.81E+03	1.44E-04	6.22E+02	7.47E+02	1.78E+02	5.80E+02	2.19E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.12E-11	4.95E-11	1.18E-11	3.84E-11	1.45E-10
Ytterbium (70)	Yb-165	3.68E+04	1.88E-05	2.76E+03	3.47E+03	8.25E+02	2.09E+03	1.00E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.40E-11	3.02E-11	7.18E-12	1.82E-11	8.72E-11
Ytterbium (70)	Yb-166	1.07E+02	6.47E-03	1.71E+00	2.54E+00	5.93E-01	1.02E+00	7.68E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.14E-12	7.63E-12	1.78E-12	3.06E-12	2.31E-11
Ytterbium (70)	Yb-167	2.08E+04	3.33E-05	1.25E+04	1.06E+04	2.97E+03	1.35E+04	3.22E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.94E-10	1.65E-10	4.63E-11	2.10E-10	5.01E-10
Ytterbium (70)	Yb-169	7.90E+00	8.77E-02	1.22E+00	8.59E-01	2.44E-01	1.03E+00	2.27E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.06E-11	3.57E-11	1.01E-11	4.27E-11	9.44E-11
Ytterbium (70)	Yb-175	6.04E+01	1.15E-02	9.95E+02	1.52E+03	4.27E+02	6.45E+02	4.14E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.59E-09	8.52E-09	2.40E-09	3.62E-09	2.33E-08
Ytterbium (70)	Yb-177	3.18E+03	2.18E-04	2.75E+03	4.06E+03	1.09E+03	2.02E+03	9.02E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.97E-10	4.39E-10	1.18E-10	2.19E-10	9.76E-10
Ytterbium (70)	Yb-178	4.92E+03	1.41E-04	1.02E+04	1.15E+04	4.13E+03	8.58E+03	2.97E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.12E-10	8.07E-10	2.90E-10	6.02E-10	2.08E-09
Ytterbium (70)	Yb-179	4.55E+04	1.52E-05	1.14E+06	1.80E+06	4.56E+05	7.61E+05	1.67E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.70E-09	1.38E-08	3.48E-09	5.80E-09	1.28E-08
Zinc (30)	Zn-60	1.53E+05	4.53E-06	8.02E+08	2.12E+09	5.14E+08	4.38E+08	6.12E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.10E-07	1.61E-06	3.91E-07	3.33E-07	4.66E-06
Zinc (30)	Zn-61	2.45E+05	2.83E-06	4.99E+04	5.21E+04	2.06E+04	3.15E+04	2.43E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.41E-11	2.51E-11	9.94E-12	1.52E-11	1.17E-10
Zinc (30)	Zn-62	6.61E+02	1.05E-03	6.71E+01	8.76E+01	3.20E+01	6.45E+01	4.53E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.22E-11	1.59E-11	5.83E-12	1.17E-11	8.25E-11
Zinc (30)	Zn-63	9.47E+03	7.32E-05	3.15E+03	6.32E+03	1.70E+03	1.86E+03	2.02E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.07E-11	8.16E-11	2.20E-11	2.41E-11	2.61E-10
Zinc (30)	Zn-65	1.04E+00	6.69E-01	1.93E-01	2.00E-01	7.99E-02	1.78E-01	1.28E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.35E-11	2.44E-11	9.73E-12	2.17E-11	1.56E-10
Zinc (30)	Zn-69	6.46E+03	1.07E-04	6.14E+10	8.56E+10	3.71E+10	4.04E+10	1.07E+10	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.27E-03	1.78E-03	7.70E-04	8.38E-04	2.22E-04
Zinc (30)	Zn-69m	4.41E+02	1.57E-03	8.65E+01	2.30E+02	6.54E+01	4.69E+01	6.13E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.63E-11	6.98E-11	1.98E-11	1.42E-11	1.86E-10
Zinc (30)	Zn-71	1.49E+05	4.66E-06	1.90E+17	5.63E+17	1.60E+17	1.08E+17	1.15E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.76E+02	5.22E+02	1.49E+02	1.00E+02	1.06E+03
Zinc (30)	Zn-71m	1.53E+03	4.52E-04	2.51E+01	7.22E+01	1.95E+01	1.27E+01	1.81E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.25E-12	6.49E-12	1.75E-12	1.14E-12	1.63E-11
Zinc (30)	Zn-72	1.31E+02	5.31E-03	1.52E+00	4.23E+00	1.02E+00	8.76E-01	1.26E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.63E-12	4.53E-12	1.09E-12	9.38E-13	1.35E-11
Zirconium (40)	Zr-85	4.63E+04	1.50E-05	1.34E+03	2.52E+03	7.76E+02	1.24E+03	1.07E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.78E-12	8.98E-12	2.76E-12	4.41E-12	3.82E-11
Zirconium (40)	Zr-86	3.68E+02	1.88E-03	1.87E+00	4.35E+00	1.15E+00	1.21E+00	1.51E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.49E-13	1.97E-12	5.22E-13	5.51E-13	6.84E-12
Zirconium (40)	Zr-87	3.61E+03	1.92E-04	1.60E+02	2.91E+02	8.17E+01	1.51E+02	1.26E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.47E-12	1.36E-11	3.82E-12	7.04E-12	5.88E-11
Zirconium (40)	Zr-88	3.03E+00	2.28E-01	3.32E-02	7.25E-02	2.08E-02	3.10E-02	2.88E-01	3.06E-02	2.43E-02	1.29E-02	4.16E-02	2.96E-02	1.00E-08	1.87E-12	4.08E-12	1.17E-12	1.75E-12	1.62E-11
Zirconium (40)	Zr-89	7.74E+01	8.95E-03	2.70E+00	5.28E+00	1.41E+00	2.72E+00	2.26E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.02E-12	1.18E-11	3.14E-12	6.06E-12	5.05E-11
Zirconium (40)	Zr-89m	8.75E+04	7.92E-06	3.25E+03	6.36E+03	1.70E+03	3.28E+03	2.73E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.42E-12	1.25E-11	3.35E-12	6.46E-12	5.38E-11
Zirconium (40)	Zr-93	4.53E-07	1.53E+06																
Zirconium (40)	Zr-95	3.95E+00	1.75E-01	1.96E-01	5.59E-01	1.25E-01	1.06E-01	1.66E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.15E-12	2.61E-11	5.85E-12	4.96E-12	7.75E-11
Zirconium (40)	Zr-97	3.63E+02	1.91E-03	1.44E+01	4.33E+01	9.84E+00	7.60E+00	1.17E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.45E-12	2.25E-11	5.11E-12	3.95E-12	6.09E-11

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Actinium (89)	Ac-223	1.73E+05	4.00E-06		5.70E+17	5.70E+17	1.00E-08	1.42E+00
Actinium (89)	Ac-224	2.18E+03	3.17E-04	4.42E+02	5.27E+03	4.08E+02	1.00E-08	8.12E-14
Actinium (89)	Ac-225	2.53E+01	2.74E-02	8.70E+00	3.80E+02	8.51E+00	1.00E-08	1.47E-13
Actinium (89)	Ac-226	2.07E+02	3.35E-03	6.00E+01	5.10E+03	6.00E+01	1.62E+00	1.27E-13
Actinium (89)	Ac-227	3.18E-02	2.18E+01	3.15E-02	7.60E+00	3.14E-02	2.15E-01	4.35E-13
Actinium (89)	Ac-228	9.87E+02	7.02E-04	3.03E+02	2.97E+03	2.75E+02	1.00E-08	1.23E-13
Actinium (89)	Ac-230	1.79E+05	3.87E-06	1.18E+08	4.65E+10	1.18E+08	8.82E+03	2.93E-10
Actinium (89)	Ac-231	4.86E+04	1.43E-05	1.88E+06	1.19E+07	1.62E+06	1.00E-08	1.50E-11
Actinium (89)	Ac-232	1.84E+05	3.77E-06	4.65E+13	6.33E+15	4.61E+13	1.76E+02	1.13E-04
Actinium (89)	Ac-233	1.51E+05	4.60E-06	2.08E+06	2.80E+06	1.19E+06	1.00E-08	3.58E-12
Silver (47)	Ag-100m	1.63E+05	4.26E-06	1.36E+06	2.38E+05	2.03E+05	1.00E-08	2.42E-13
Silver (47)	Ag-101	3.28E+04	2.11E-05	1.42E+06	2.09E+05	1.82E+05	1.00E-08	1.09E-12
Silver (47)	Ag-102	2.82E+04	2.45E-05	3.86E+15	1.37E+13	1.37E+13	1.00E-08	9.59E-05
Silver (47)	Ag-102m	4.73E+04	1.46E-05	5.47E+15	1.90E+13	1.90E+13	1.00E-08	7.94E-05
Silver (47)	Ag-103	5.54E+03	1.25E-04	3.20E+05	2.55E+04	2.37E+04	1.00E-08	8.53E-13
Silver (47)	Ag-104	5.26E+03	1.32E-04	1.15E+06	7.77E+03	7.71E+03	1.00E-08	2.96E-13
Silver (47)	Ag-104m	1.09E+04	6.37E-05	2.19E+06	2.34E+04	2.32E+04	1.00E-08	4.30E-13
Silver (47)	Ag-105	6.13E+00	1.13E-01	1.78E+02	4.81E+01	3.79E+01	1.00E-08	1.26E-12
Silver (47)	Ag-105m	5.04E+04	1.38E-05	1.47E+06	3.97E+05	3.12E+05	1.00E-08	1.26E-12
Silver (47)	Ag-106	1.52E+04	4.56E-05	3.15E+12	3.85E+10	3.80E+10	1.00E-08	5.14E-07
Silver (47)	Ag-106m	3.05E+01	2.27E-02	2.78E+02	4.35E+01	3.76E+01	1.00E-08	2.53E-13
Silver (47)	Ag-108	1.54E+05	4.51E-06		4.89E+19	4.89E+19	1.00E-08	6.67E+01
Silver (47)	Ag-108m	1.66E-03	4.18E+02	5.69E+00	2.42E+00	1.70E+00	1.00E-08	2.15E-10
Silver (47)	Ag-109m	5.52E+05	1.26E-06		5.91E+23	5.91E+23	1.00E-08	2.27E+05
Silver (47)	Ag-110	8.88E+05	7.80E-07		5.00E+23	5.00E+23	1.00E-08	1.20E+05
Silver (47)	Ag-110m	1.01E+00	6.84E-01	7.54E+00	2.30E+00	1.76E+00	1.00E-08	3.71E-13
Silver (47)	Ag-111	3.40E+01	2.04E-02	3.63E+02	2.41E+03	3.15E+02	1.00E-08	2.00E-12
Silver (47)	Ag-111m	3.37E+05	2.05E-06	3.63E+06	2.41E+07	3.16E+06	1.00E-08	2.02E-12
Silver (47)	Ag-112	1.94E+03	3.57E-04	6.14E+04	9.42E+03	8.16E+03	1.00E-08	9.15E-13
Silver (47)	Ag-113	1.13E+03	6.13E-04	3.66E+04	2.66E+04	1.54E+04	1.00E-08	2.99E-12
Silver (47)	Ag-113m	3.18E+05	2.18E-06	1.61E+07	1.17E+07	6.76E+06	1.00E-08	4.66E-12
Silver (47)	Ag-114	4.75E+06	1.46E-07		9.65E+27	9.65E+27	1.00E-08	4.49E+08

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Silver (47)	Ag-115	1.82E+04	3.81E-05	1.54E+05	1.98E+05	8.66E+04	1.00E-08	1.06E-12
Silver (47)	Ag-116	1.36E+05	5.10E-06		4.00E+17	4.00E+17	1.00E-08	6.63E-01
Silver (47)	Ag-117	2.97E+05	2.33E-06	1.00E+07	6.74E+05	6.31E+05	1.00E-08	4.83E-13
Silver (47)	Ag-99	1.76E+05	3.93E-06	2.83E+07	1.09E+06	1.05E+06	1.00E-08	1.15E-12
Aluminum (13)	Al-26	9.67E-07	7.17E+05	3.83E+00	1.52E+00	1.09E+00	1.00E-08	5.67E-08
Aluminum (13)	Al-28	1.63E+05	4.26E-06		3.39E+18	3.39E+18	1.00E-08	1.13E+00
Aluminum (13)	Al-29	5.55E+04	1.25E-05		2.13E+15	2.13E+15	1.00E-08	2.16E-03
Americium (95)	Am-237	4.99E+03	1.39E-04	5.13E+05	4.91E+04	4.48E+04	1.00E-08	4.13E-12
Americium (95)	Am-238	3.72E+03	1.86E-04	2.72E+04	1.67E+04	1.03E+04	1.00E-08	1.29E-12
Americium (95)	Am-239	5.10E+02	1.36E-03	2.70E+04	9.15E+03	6.83E+03	1.00E-08	6.21E-12
Americium (95)	Am-240	1.20E+02	5.80E-03	2.58E+03	4.66E+02	3.95E+02	1.00E-08	1.54E-12
Americium (95)	Am-241	1.60E-03	4.32E+02	6.56E-02	1.72E+02	6.55E-02	1.00E-08	1.91E-11
Americium (95)	Am-242	3.79E+02	1.83E-03	5.85E+02	8.59E+04	5.81E+02	1.00E-08	7.21E-13
Americium (95)	Am-242m	4.91E-03	1.41E+02	6.36E-02	1.79E+02	6.36E-02	4.66E+01	6.07E-12
Americium (95)	Am-243	9.40E-05	7.37E+03	6.56E-02	1.77E+01	6.53E-02	4.41E-02	3.28E-10
Americium (95)	Am-244	6.01E+02	1.15E-03	1.58E+03	2.98E+03	1.03E+03	1.00E-08	8.15E-13
Americium (95)	Am-244m	1.40E+04	4.95E-05	4.05E+04	2.34E+09	4.05E+04	1.00E-08	1.37E-12
Americium (95)	Am-245	2.96E+03	2.34E-04	4.99E+05	2.71E+05	1.76E+05	1.00E-08	2.82E-11
Americium (95)	Am-246	9.34E+03	7.42E-05	1.33E+06	4.81E+04	4.64E+04	1.00E-08	2.37E-12
Americium (95)	Am-246m	1.46E+04	4.76E-05	6.46E+06	1.27E+10	6.46E+06	1.00E-08	2.12E-10
Americium (95)	Am-247	1.58E+04	4.38E-05	7.45E+09	3.11E+11	7.42E+09	2.09E+05	2.25E-07
Argon (18)	Ar-37	7.22E+00	9.60E-02					
Argon (18)	Ar-39	2.58E-03	2.69E+02		1.65E+03	1.65E+03	1.00E-08	4.86E-08
Argon (18)	Ar-41	3.32E+03	2.09E-04		1.02E+04	1.02E+04	1.00E-08	2.44E-13
Argon (18)	Ar-42	2.11E-02	3.29E+01	3.09E+01	9.38E+00	7.20E+00	7.87E-03	2.78E-11
Argon (18)	Ar-43	6.78E+04	1.02E-05	3.63E+06	2.71E+05	2.52E+05	1.00E-08	3.10E-13
Argon (18)	Ar-44	3.07E+04	2.26E-05	4.25E+12	4.46E+10	4.42E+10	1.00E-08	1.23E-07
Arsenic (33)	As-68	1.44E+05	4.81E-06	2.30E+06	8.93E+05	6.43E+05	1.00E-08	5.88E-13
Arsenic (33)	As-69	2.39E+04	2.90E-05	1.53E+06	9.91E+04	9.31E+04	1.00E-08	5.21E-13
Arsenic (33)	As-70	6.92E+03	1.00E-04	6.76E+05	6.42E+03	6.36E+03	1.00E-08	1.25E-13
Arsenic (33)	As-71	9.30E+01	7.45E-03	2.66E+03	6.41E+02	5.16E+02	1.00E-08	7.65E-13
Arsenic (33)	As-72	2.33E+02	2.97E-03	1.69E+03	4.86E+02	3.77E+02	1.00E-08	2.26E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion BDCC DL=1	External Exposure BDCC DL=1	Total BDCC DL=1	Peak Dose Start Time Total	Total BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Arsenic (33)	As-73	3.15E+00	2.20E-01	1.70E+02	2.40E+03	1.59E+02	1.00E-08	7.13E-12
Arsenic (33)	As-74	1.42E+01	4.87E-02	1.49E+02	7.15E+01	4.83E+01	1.00E-08	4.87E-13
Arsenic (33)	As-76	2.35E+02	2.95E-03	1.97E+03	1.71E+03	9.17E+02	1.00E-08	5.76E-13
Arsenic (33)	As-77	1.56E+02	4.43E-03	5.29E+03	4.41E+04	4.72E+03	1.00E-08	4.51E-12
Arsenic (33)	As-78	4.02E+03	1.73E-04	2.72E+05	1.13E+04	1.09E+04	1.00E-08	4.09E-13
Arsenic (33)	As-79	4.04E+04	1.71E-05	8.40E+10	3.34E+15	8.40E+10	1.00E-08	3.18E-07
Astatine (85)	At-204	3.96E+04	1.75E-05	6.51E+05	3.83E+04	3.62E+04	1.00E-08	3.62E-13
Astatine (85)	At-205	1.39E+04	4.98E-05	2.04E+05	1.76E+04	1.62E+04	1.00E-08	4.65E-13
Astatine (85)	At-206	1.19E+04	5.82E-05	8.64E+03	1.12E+04	4.88E+03	1.00E-08	1.64E-13
Astatine (85)	At-207	3.37E+03	2.05E-04	1.08E+05	3.97E+03	3.83E+03	1.00E-08	4.56E-13
Astatine (85)	At-208	3.72E+03	1.86E-04	1.55E+02	4.90E+03	1.50E+02	1.00E-08	1.63E-14
Astatine (85)	At-209	1.12E+03	6.18E-04	1.47E+03	1.90E+03	8.28E+02	1.00E-08	2.99E-13
Astatine (85)	At-210	7.49E+02	9.25E-04	9.88E+00	1.04E+03	9.78E+00	1.00E-08	5.32E-15
Astatine (85)	At-211	8.42E+02	8.24E-04	1.03E+03	6.61E+04	1.01E+03	1.00E-08	4.94E-13
Astatine (85)	At-215	2.19E+11	3.17E-12		1.26E+24	1.26E+24	1.00E-08	2.40E+00
Astatine (85)	At-216	7.28E+10	9.51E-12	1.52E+14	8.75E+12	8.28E+12	1.00E-08	4.76E-11
Astatine (85)	At-217	6.77E+08	1.02E-09	1.68E+11	7.39E+11	1.37E+11	1.00E-08	8.52E-11
Astatine (85)	At-218	1.46E+07	4.76E-08	3.51E+06	4.78E+10	3.51E+06	1.61E+00	1.02E-13
Astatine (85)	At-219	3.90E+05	1.78E-06					
Astatine (85)	At-220	9.82E+04	7.06E-06	2.08E+05	2.72E+05	1.18E+05	1.00E-08	5.13E-13
Gold (79)	Au-186	3.40E+04	2.04E-05	1.18E+06	5.87E+04	5.59E+04	1.00E-08	5.92E-13
Gold (79)	Au-187	4.34E+04	1.60E-05	2.88E+06	1.84E+05	1.73E+05	1.00E-08	1.45E-12
Gold (79)	Au-190	8.51E+03	8.14E-05	2.66E+06	1.51E+04	1.50E+04	1.00E-08	6.51E-13
Gold (79)	Au-191	1.91E+03	3.63E-04	5.77E+04	8.68E+03	7.55E+03	1.00E-08	1.47E-12
Gold (79)	Au-192	1.23E+03	5.64E-04	9.44E+04	2.66E+03	2.59E+03	1.00E-08	7.85E-13
Gold (79)	Au-193	3.44E+02	2.01E-03	3.55E+04	8.65E+03	6.96E+03	1.00E-08	7.57E-12
Gold (79)	Au-193m	5.60E+06	1.24E-07	5.78E+08	1.41E+08	1.13E+08	1.00E-08	7.58E-12
Gold (79)	Au-194	1.60E+02	4.34E-03	5.22E+03	6.33E+02	5.65E+02	1.00E-08	1.33E-12
Gold (79)	Au-195	1.36E+00	5.10E-01	9.22E+01	9.89E+01	4.77E+01	1.00E-08	1.33E-11
Gold (79)	Au-195m	7.17E+05	9.67E-07	4.86E+07	5.21E+07	2.52E+07	1.00E-08	1.33E-11
Gold (79)	Au-196	4.09E+01	1.69E-02	1.54E+03	3.46E+02	2.83E+02	1.00E-08	2.63E-12
Gold (79)	Au-196m	6.32E+02	1.10E-03	1.13E+04	3.60E+03	2.73E+03	1.00E-08	1.64E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Gold (79)	Au-198	9.39E+01	7.38E-03	1.22E+03	8.68E+02	5.07E+02	1.00E-08	2.08E-12
Gold (79)	Au-198m	1.11E+02	6.22E-03	6.65E+02	4.71E+02	2.76E+02	1.00E-08	9.50E-13
Gold (79)	Au-199	8.06E+01	8.60E-03	2.40E+03	3.51E+03	1.42E+03	1.00E-08	6.83E-12
Gold (79)	Au-200	7.53E+03	9.21E-05	1.49E+06	8.37E+04	7.92E+04	1.00E-08	4.09E-12
Gold (79)	Au-200m	3.25E+02	2.13E-03	4.24E+03	6.27E+02	5.46E+02	1.00E-08	6.53E-13
Gold (79)	Au-201	1.40E+04	4.95E-05	1.11E+12	1.03E+11	9.45E+10	1.00E-08	2.63E-06
Gold (79)	Au-202	7.59E+05	9.13E-07		2.02E+23	2.02E+23	1.00E-08	1.05E+05
Barium (56)	Ba-124	3.31E+04	2.09E-05	9.72E+15	9.94E+13	9.84E+13	1.00E-08	7.15E-04
Barium (56)	Ba-126	3.64E+03	1.90E-04	1.92E+05	7.71E+03	7.41E+03	1.00E-08	4.98E-13
Barium (56)	Ba-127	2.87E+04	2.42E-05	1.54E+07	1.62E+05	1.60E+05	1.00E-08	1.38E-12
Barium (56)	Ba-128	1.04E+02	6.66E-03	5.08E+02	3.88E+02	2.20E+02	1.00E-08	5.25E-13
Barium (56)	Ba-129	2.72E+03	2.55E-04	3.33E+05	1.75E+04	1.66E+04	1.00E-08	1.53E-12
Barium (56)	Ba-129m	2.81E+03	2.47E-04	2.83E+05	6.09E+03	5.96E+03	1.00E-08	5.31E-13
Barium (56)	Ba-131	2.20E+01	3.15E-02	5.64E+02	1.78E+02	1.35E+02	1.00E-08	1.56E-12
Barium (56)	Ba-131m	2.49E+04	2.78E-05	6.40E+05	2.02E+05	1.53E+05	1.00E-08	1.56E-12
Barium (56)	Ba-133	6.59E-02	1.05E+01	8.97E+00	1.04E+01	4.81E+00	1.00E-08	1.88E-11
Barium (56)	Ba-133m	1.56E+02	4.44E-03	3.21E+03	6.93E+03	2.19E+03	1.00E-08	3.63E-12
Barium (56)	Ba-135m	2.12E+02	3.28E-03	6.50E+03	1.47E+04	4.51E+03	1.00E-08	5.59E-12
Barium (56)	Ba-137m	1.43E+05	4.86E-06		1.76E+18	1.76E+18	1.00E-08	3.28E+00
Barium (56)	Ba-139	4.39E+03	1.58E-04	4.80E+05	1.10E+05	8.97E+04	1.00E-08	5.52E-12
Barium (56)	Ba-140	1.98E+01	3.49E-02	5.73E+01	3.18E+01	2.04E+01	1.00E-08	2.80E-13
Barium (56)	Ba-141	1.99E+04	3.48E-05	2.46E+05	3.56E+05	1.45E+05	1.00E-08	2.00E-12
Barium (56)	Ba-142	3.44E+04	2.02E-05	2.62E+06	5.96E+04	5.83E+04	1.00E-08	4.67E-13
Beryllium (4)	Be-10	4.59E-07	1.51E+06	1.17E+01	1.21E+03	1.16E+01	1.00E-08	4.91E-07
Beryllium (4)	Be-7	4.75E+00	1.46E-01	2.29E+03	3.77E+02	3.24E+02	1.00E-08	9.26E-13
Bismuth (83)	Bi-197	3.92E+04	1.77E-05	1.79E+06	1.52E+05	1.40E+05	1.00E-08	1.37E-12
Bismuth (83)	Bi-200	1.00E+04	6.93E-05	2.07E+05	1.01E+04	9.63E+03	1.00E-08	3.73E-13
Bismuth (83)	Bi-201	3.37E+03	2.05E-04	1.19E+05	4.98E+03	4.78E+03	1.00E-08	5.53E-13
Bismuth (83)	Bi-202	3.53E+03	1.96E-04	4.66E+05	5.13E+03	5.07E+03	1.00E-08	5.63E-13
Bismuth (83)	Bi-203	5.16E+02	1.34E-03	9.25E+03	7.87E+02	7.26E+02	1.00E-08	5.54E-13
Bismuth (83)	Bi-204	5.41E+02	1.28E-03	1.25E+04	6.98E+02	6.61E+02	1.00E-08	4.84E-13
Bismuth (83)	Bi-205	1.65E+01	4.19E-02	2.41E+02	4.05E+01	3.47E+01	1.00E-08	8.34E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Bismuth (83)	Bi-206	4.05E+01	1.71E-02	2.78E+02	4.98E+01	4.22E+01	1.00E-08	4.16E-13
Bismuth (83)	Bi-207	2.11E-02	3.29E+01	1.05E+01	2.61E+00	2.09E+00	1.00E-08	3.99E-11
Bismuth (83)	Bi-208	1.88E-06	3.68E+05	1.15E+01	1.70E+00	1.48E+00	1.00E-08	3.17E-07
Bismuth (83)	Bi-210	5.05E+01	1.37E-02	6.68E-01	5.39E+03	6.68E-01	2.94E-03	5.39E-15
Bismuth (83)	Bi-210m	2.28E-07	3.04E+06	8.91E-01	1.23E+01	8.31E-01	1.00E-08	1.48E-06
Bismuth (83)	Bi-211	1.70E+05	4.07E-06		9.81E+17	9.81E+17	1.00E-08	2.36E+00
Bismuth (83)	Bi-212	6.02E+03	1.15E-04	3.08E+05	1.85E+04	1.75E+04	1.00E-08	1.19E-12
Bismuth (83)	Bi-212n	5.20E+04	1.33E-05		2.79E+16	2.79E+16	1.00E-08	2.21E-01
Bismuth (83)	Bi-213	7.99E+03	8.67E-05	4.19E+05	1.43E+05	1.07E+05	1.00E-08	5.52E-12
Bismuth (83)	Bi-214	1.83E+04	3.79E-05	4.41E+03	6.00E+07	4.41E+03	1.61E+00	1.00E-13
Bismuth (83)	Bi-215	4.79E+04	1.45E-05	3.60E+06	8.62E+05	6.95E+05	1.00E-08	6.05E-12
Bismuth (83)	Bi-216	1.68E+05	4.13E-06	3.57E+05	4.66E+05	2.02E+05	1.00E-08	5.05E-13
Berkelium (97)	Bk-245	5.12E+01	1.35E-02	1.15E+03	9.31E+02	5.14E+02	1.00E-08	4.77E-12
Berkelium (97)	Bk-246	1.41E+02	4.93E-03	3.90E+03	6.64E+02	5.67E+02	1.00E-08	1.93E-12
Berkelium (97)	Bk-247	5.02E-04	1.38E+03	3.82E-02	2.84E+01	3.81E-02	1.00E-08	3.64E-11
Berkelium (97)	Bk-248m	2.56E+02	2.71E-03	2.88E+02	1.66E+04	2.83E+02	1.00E-08	5.32E-13
Berkelium (97)	Bk-249	7.67E-01	9.04E-01	1.38E+01	4.80E+03	1.38E+01	1.00E-08	8.71E-12
Berkelium (97)	Bk-250	1.89E+03	3.67E-04	2.99E+03	8.31E+03	2.20E+03	1.00E-08	5.65E-13
Berkelium (97)	Bk-251	6.55E+03	1.06E-04	2.79E+05	2.61E+05	1.35E+05	1.00E-08	1.00E-11
Bromine (35)	Br-72	2.78E+05	2.49E-06	5.30E+05	5.71E+05	2.75E+05	1.00E-08	1.38E-13
Bromine (35)	Br-73	1.07E+05	6.47E-06	3.36E+06	3.80E+05	3.42E+05	1.00E-08	4.52E-13
Bromine (35)	Br-74	1.43E+04	4.83E-05	4.73E+11	2.65E+09	2.63E+09	1.00E-08	2.64E-08
Bromine (35)	Br-74m	7.92E+03	8.75E-05	7.84E+05	7.71E+03	7.63E+03	1.00E-08	1.38E-13
Bromine (35)	Br-75	3.77E+03	1.84E-04	2.14E+04	9.33E+03	6.50E+03	1.00E-08	2.51E-13
Bromine (35)	Br-76	3.75E+02	1.85E-03	1.08E+04	5.44E+02	5.18E+02	1.00E-08	2.04E-13
Bromine (35)	Br-76m	1.67E+07	4.15E-08	4.83E+08	2.43E+07	2.32E+07	1.00E-08	2.05E-13
Bromine (35)	Br-77	1.06E+02	6.51E-03	1.45E+04	1.33E+03	1.22E+03	1.00E-08	1.72E-12
Bromine (35)	Br-77m	8.51E+04	8.14E-06	1.16E+07	1.07E+06	9.76E+05	1.00E-08	1.71E-12
Bromine (35)	Br-78	5.64E+04	1.23E-05		2.89E+15	2.89E+15	1.00E-08	7.75E-03
Bromine (35)	Br-80	2.06E+04	3.36E-05	6.04E+14	3.29E+13	3.12E+13	1.00E-08	2.35E-04
Bromine (35)	Br-80m	1.37E+03	5.05E-04	1.26E+05	2.96E+04	2.40E+04	1.00E-08	2.71E-12
Bromine (35)	Br-82	1.72E+02	4.03E-03	4.19E+03	2.60E+02	2.45E+02	1.00E-08	2.26E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Bromine (35)	Br-82m	5.94E+04	1.17E-05	1.48E+06	9.18E+04	8.64E+04	1.00E-08	2.31E-13
Bromine (35)	Br-83	2.53E+03	2.74E-04	7.63E+05	3.25E+05	2.28E+05	1.00E-08	1.45E-11
Bromine (35)	Br-84	1.15E+04	6.05E-05	1.73E+06	2.60E+04	2.56E+04	1.00E-08	3.65E-13
Bromine (35)	Br-84m	6.07E+04	1.14E-05		4.15E+15	4.15E+15	1.00E-08	1.11E-02
Bromine (35)	Br-85	1.26E+05	5.52E-06		2.99E+06	2.99E+06	1.00E-08	3.93E-12
Carbon (6)	C-10	1.14E+06	6.11E-07		2.16E+23	2.16E+23	1.00E-08	3.69E+03
Carbon (6)	C-11	1.79E+04	3.88E-05	9.25E+13	6.80E+11	6.75E+11	1.00E-08	8.06E-07
Carbon (6)	C-14	1.22E-04	5.70E+03	2.30E+01	3.25E+05	2.30E+01	1.00E-08	5.14E-09
Calcium (20)	Ca-41	6.79E-06	1.02E+05	5.89E+01		5.89E+01	1.00E-08	6.89E-07
Calcium (20)	Ca-45	1.55E+00	4.46E-01	3.72E+01	1.95E+05	3.71E+01	1.00E-08	2.09E-12
Calcium (20)	Ca-47	5.58E+01	1.24E-02	3.47E+02	1.92E+02	1.24E+02	1.00E-08	2.02E-13
Calcium (20)	Ca-49	4.18E+04	1.66E-05	6.89E+06	1.55E+06	1.27E+06	1.00E-08	2.88E-12
Cadmium (48)	Cd-101	2.68E+05	2.59E-06	1.15E+07	1.68E+06	1.47E+06	1.00E-08	1.07E-12
Cadmium (48)	Cd-102	6.62E+04	1.05E-05	4.54E+15	1.55E+13	1.55E+13	1.00E-08	4.63E-05
Cadmium (48)	Cd-103	4.99E+04	1.39E-05	2.88E+06	2.30E+05	2.13E+05	1.00E-08	8.53E-13
Cadmium (48)	Cd-104	6.31E+03	1.10E-04	5.04E+05	1.20E+04	1.17E+04	1.00E-08	3.75E-13
Cadmium (48)	Cd-105	6.56E+03	1.06E-04	1.75E+05	1.47E+04	1.35E+04	1.00E-08	4.20E-13
Cadmium (48)	Cd-107	9.34E+02	7.42E-04	2.00E+05	1.54E+05	8.68E+04	1.00E-08	1.93E-11
Cadmium (48)	Cd-109	5.48E-01	1.26E+00	8.68E+00	2.95E+02	8.43E+00	1.00E-08	3.25E-12
Cadmium (48)	Cd-111m	7.51E+03	9.23E-05	7.27E+06	1.08E+05	1.07E+05	1.00E-08	3.06E-12
Cadmium (48)	Cd-113	9.00E-17	7.70E+15	5.45E-01	7.25E+04	5.45E-01	8.80E-08	1.33E+03
Cadmium (48)	Cd-113m	4.91E-02	1.41E+01	5.85E-01	2.16E+03	5.85E-01	1.00E-08	2.61E-12
Cadmium (48)	Cd-115	1.14E+02	6.10E-03	1.03E+03	1.19E+03	5.50E+02	1.00E-08	1.08E-12
Cadmium (48)	Cd-115m	5.67E+00	1.22E-01	2.31E+01	2.09E+02	2.08E+01	1.00E-08	8.19E-13
Cadmium (48)	Cd-117	2.44E+03	2.84E-04	7.98E+04	6.14E+03	5.70E+03	1.00E-08	5.31E-13
Cadmium (48)	Cd-117m	1.81E+03	3.84E-04	7.59E+04	2.70E+03	2.61E+03	1.00E-08	3.28E-13
Cadmium (48)	Cd-118	7.24E+03	9.57E-05	5.26E+05	1.07E+05	8.92E+04	1.00E-08	2.82E-12
Cadmium (48)	Cd-119	1.35E+05	5.12E-06	6.26E+09	6.31E+10	5.69E+09	1.00E-08	9.71E-09
Cadmium (48)	Cd-119m	1.66E+05	4.19E-06	1.15E+09	1.16E+10	1.04E+09	1.00E-08	1.45E-09
Cerium (58)	Ce-130	1.59E+04	4.36E-05	3.07E+12	1.53E+10	1.52E+10	1.00E-08	2.41E-07
Cerium (58)	Ce-131	3.57E+04	1.94E-05	8.60E+05	1.21E+05	1.06E+05	1.00E-08	7.55E-13
Cerium (58)	Ce-132	1.73E+03	4.01E-04	3.12E+04	3.03E+03	2.76E+03	1.00E-08	4.09E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Cerium (58)	Ce-133	3.76E+03	1.85E-04	2.30E+05	1.94E+04	1.79E+04	1.00E-08	1.23E-12
Cerium (58)	Ce-133m	1.24E+03	5.59E-04	4.86E+04	2.60E+03	2.47E+03	1.00E-08	5.14E-13
Cerium (58)	Ce-134	8.00E+01	8.66E-03	4.02E+02	3.77E+02	1.95E+02	1.00E-08	6.32E-13
Cerium (58)	Ce-135	3.43E+02	2.02E-03	1.55E+04	1.60E+03	1.45E+03	1.00E-08	1.11E-12
Cerium (58)	Ce-137	6.75E+02	1.03E-03	3.40E+05	7.78E+04	6.33E+04	1.00E-08	2.49E-11
Cerium (58)	Ce-137m	1.76E+02	3.93E-03	4.06E+03	8.07E+03	2.70E+03	1.00E-08	4.07E-12
Cerium (58)	Ce-139	1.84E+00	3.77E-01	1.11E+02	5.73E+01	3.77E+01	1.00E-08	5.54E-12
Cerium (58)	Ce-141	7.78E+00	8.91E-02	1.46E+02	4.19E+02	1.08E+02	1.00E-08	3.80E-12
Cerium (58)	Ce-143	1.84E+02	3.77E-03	1.07E+03	2.15E+03	7.14E+02	1.00E-08	1.08E-12
Cerium (58)	Ce-144	8.88E-01	7.81E-01	3.82E+00	3.17E+01	3.41E+00	1.00E-08	1.07E-12
Cerium (58)	Ce-145	1.21E+05	5.73E-06	4.09E+06	4.59E+06	2.17E+06	1.00E-08	5.03E-12
Californium (98)	Cf-244	1.88E+04	3.69E-05	9.95E+03	5.99E+06	9.95E+03	1.00E-08	2.51E-13
Californium (98)	Cf-246	1.70E+02	4.08E-03	1.70E+02	5.83E+05	1.70E+02	1.00E-08	4.77E-13
Californium (98)	Cf-247	1.95E+03	3.55E-04	1.31E+05	8.65E+04	5.22E+04	1.00E-08	1.28E-11
Californium (98)	Cf-248	7.57E-01	9.15E-01	6.16E-01	5.56E+03	6.16E-01	1.00E-08	3.92E-13
Californium (98)	Cf-249	1.97E-03	3.51E+02	3.81E-02	1.22E+01	3.80E-02	1.00E-08	9.30E-12
Californium (98)	Cf-250	5.30E-02	1.31E+01	8.52E-02	3.95E+02	8.52E-02	1.00E-08	7.80E-13
Californium (98)	Cf-251	7.70E-04	9.00E+02	3.73E-02	3.50E+01	3.73E-02	1.00E-08	2.36E-11
Californium (98)	Cf-252	2.62E-01	2.65E+00	1.68E-01	9.86E+00	1.65E-01	1.00E-08	3.08E-13
Californium (98)	Cf-253	1.42E+01	4.88E-02	2.33E+01	1.86E+04	2.33E+01	1.00E-08	8.04E-13
Californium (98)	Cf-254	4.18E+00	1.66E-01	1.41E-01	9.94E-01	1.24E-01	1.00E-08	1.46E-14
Californium (98)	Cf-255	4.29E+03	1.62E-04	6.69E+03	8.01E+05	6.63E+03	1.00E-08	7.66E-13
Chlorine (17)	Cl-34	1.43E+07	4.84E-08		2.10E+30	2.10E+30	6.31E-06	9.66E+09
Chlorine (17)	Cl-34m	1.14E+04	6.09E-05	1.46E+06	2.23E+04	2.20E+04	1.00E-08	1.28E-13
Chlorine (17)	Cl-36	2.30E-06	3.01E+05	1.44E+01	3.38E+02	1.38E+01	1.00E-08	4.19E-07
Chlorine (17)	Cl-38	9.78E+03	7.09E-05	1.12E+06	2.62E+04	2.56E+04	1.00E-08	1.93E-13
Chlorine (17)	Cl-39	6.55E+03	1.06E-04	1.03E+06	1.73E+04	1.70E+04	1.00E-08	1.96E-13
Chlorine (17)	Cl-40	2.70E+05	2.57E-06		1.66E+19	1.66E+19	1.00E-08	4.78E+00
Curium (96)	Cm-238	2.53E+03	2.74E-04	1.64E+04	1.04E+04	6.37E+03	1.00E-08	1.16E-12
Curium (96)	Cm-239	2.09E+03	3.31E-04	8.38E+04	1.79E+04	1.47E+04	1.00E-08	3.26E-12
Curium (96)	Cm-240	9.37E+00	7.40E-02	4.97E+00	2.99E+03	4.97E+00	1.00E-08	2.47E-13
Curium (96)	Cm-241	7.71E+00	8.99E-02	8.54E+01	6.23E+01	3.60E+01	1.00E-08	2.18E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Curium (96)	Cm-242	1.55E+00	4.46E-01	2.05E+00	1.10E+04	2.05E+00	1.00E-08	6.20E-13
Curium (96)	Cm-243	2.38E-02	2.91E+01	9.01E-02	3.21E+01	8.99E-02	1.00E-08	1.78E-12
Curium (96)	Cm-244	3.83E-02	1.81E+01	1.11E-01	6.53E+03	1.11E-01	1.00E-08	1.37E-12
Curium (96)	Cm-245	8.15E-05	8.50E+03	3.72E-02	3.73E+01	3.72E-02	1.53E+03	2.17E-10
Curium (96)	Cm-246	1.46E-04	4.76E+03	6.46E-02	9.68E+02	6.46E-02	1.00E-08	2.12E-10
Curium (96)	Cm-247	4.44E-08	1.56E+07	2.09E-02	7.06E+00	2.08E-02	2.09E+05	2.25E-07
Curium (96)	Cm-248	1.99E-06	3.48E+05	1.72E-02	3.00E+00	1.71E-02	1.00E-08	4.14E-09
Curium (96)	Cm-249	5.68E+03	1.22E-04	9.83E+04	6.41E+05	8.53E+04	1.00E-08	7.25E-12
Curium (96)	Cm-250	8.35E-05	8.30E+03	2.52E-03	2.89E-01	2.50E-03	7.78E+00	1.45E-11
Curium (96)	Cm-251	2.17E+04	3.20E-05	9.25E+05	8.65E+05	4.47E+05	1.00E-08	1.00E-11
Cobalt (27)	Co-54m	2.46E+05	2.82E-06		3.36E+19	3.36E+19	1.00E-08	1.43E+01
Cobalt (27)	Co-55	3.46E+02	2.00E-03	4.19E+03	6.76E+02	5.82E+02	1.00E-08	1.79E-13
Cobalt (27)	Co-56	3.28E+00	2.12E-01	1.80E+01	3.90E+00	3.21E+00	1.00E-08	1.06E-13
Cobalt (27)	Co-57	9.31E-01	7.44E-01	9.73E+01	5.28E+01	3.42E+01	1.00E-08	4.07E-12
Cobalt (27)	Co-58	3.57E+00	1.94E-01	6.56E+01	1.49E+01	1.22E+01	1.00E-08	3.83E-13
Cobalt (27)	Co-58m	6.72E+02	1.03E-03	1.20E+04	2.81E+03	2.27E+03	1.00E-08	3.81E-13
Cobalt (27)	Co-60	1.31E-01	5.27E+00	4.17E+00	1.74E+00	1.23E+00	1.00E-08	1.09E-12
Cobalt (27)	Co-60m	3.48E+04	1.99E-05	1.11E+06	4.61E+05	3.26E+05	1.00E-08	1.09E-12
Cobalt (27)	Co-61	3.68E+03	1.88E-04	6.55E+05	1.01E+05	8.78E+04	1.00E-08	2.82E-12
Cobalt (27)	Co-62	2.43E+05	2.85E-06		4.17E+19	4.17E+19	1.00E-08	2.07E+01
Cobalt (27)	Co-62m	2.62E+04	2.65E-05	3.53E+15	1.89E+13	1.88E+13	1.00E-08	8.66E-05
Chromium (24)	Cr-48	2.82E+02	2.46E-03	1.72E+03	3.39E+02	2.83E+02	1.00E-08	9.36E-14
Chromium (24)	Cr-49	8.61E+03	8.05E-05	1.61E+06	3.02E+04	2.96E+04	1.00E-08	3.27E-13
Chromium (24)	Cr-51	9.13E+00	7.59E-02	3.16E+03	1.14E+03	8.40E+02	1.00E-08	9.11E-12
Chromium (24)	Cr-55	1.04E+05	6.65E-06		1.93E+18	1.93E+18	1.00E-08	1.98E+00
Chromium (24)	Cr-56	6.13E+04	1.13E-05	3.20E+06	1.42E+05	1.36E+05	1.00E-08	2.41E-13
Cesium (55)	Cs-121	1.41E+05	4.92E-06	3.52E+06	2.28E+05	2.14E+05	1.00E-08	3.56E-13
Cesium (55)	Cs-121m	1.79E+05	3.87E-06	4.48E+06	7.27E+05	6.25E+05	1.00E-08	8.19E-13
Cesium (55)	Cs-123	6.19E+04	1.12E-05	3.75E+06	3.04E+05	2.81E+05	1.00E-08	1.08E-12
Cesium (55)	Cs-124	7.10E+05	9.77E-07		1.59E+22	1.59E+22	1.00E-08	5.40E+03
Cesium (55)	Cs-125	8.09E+03	8.56E-05	7.06E+03	2.94E+04	5.69E+03	1.00E-08	1.71E-13
Cesium (55)	Cs-126	2.22E+05	3.12E-06		1.25E+19	1.25E+19	1.00E-08	1.38E+01

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Cesium (55)	Cs-127	9.71E+02	7.13E-04	5.21E+05	5.48E+03	5.43E+03	1.00E-08	1.38E-12
Cesium (55)	Cs-128	1.00E+05	6.93E-06		1.91E+18	1.91E+18	1.00E-08	4.73E+00
Cesium (55)	Cs-129	1.89E+02	3.66E-03	4.18E+04	2.73E+03	2.56E+03	1.00E-08	3.39E-12
Cesium (55)	Cs-130	1.25E+04	5.56E-05	1.82E+11	2.61E+09	2.57E+09	1.00E-08	5.21E-08
Cesium (55)	Cs-130m	1.05E+05	6.58E-06	1.36E+12	1.95E+10	1.92E+10	1.00E-08	4.60E-08
Cesium (55)	Cs-131	2.61E+01	2.65E-02	6.01E+03	5.44E+03	2.85E+03	1.00E-08	2.78E-11
Cesium (55)	Cs-132	3.90E+01	1.78E-02	1.02E+03	2.16E+02	1.78E+02	1.00E-08	1.17E-12
Cesium (55)	Cs-134	3.36E-01	2.06E+00	8.15E-01	2.98E+00	6.40E-01	1.00E-08	4.96E-13
Cesium (55)	Cs-134m	2.09E+03	3.31E-04	5.06E+03	1.76E+04	3.93E+03	1.00E-08	4.89E-13
Cesium (55)	Cs-135	3.01E-07	2.30E+06	5.04E+00	8.23E+04	5.04E+00	1.00E-08	4.38E-06
Cesium (55)	Cs-135m	6.87E+03	1.01E-04	4.73E+06	1.69E+04	1.69E+04	1.00E-08	6.44E-13
Cesium (55)	Cs-136	1.92E+01	3.61E-02	8.48E+01	3.62E+01	2.54E+01	1.00E-08	3.48E-13
Cesium (55)	Cs-137	2.30E-02	3.02E+01	9.94E-01	6.92E+00	8.69E-01	1.00E-08	1.01E-11
Cesium (55)	Cs-138	1.09E+04	6.36E-05	1.51E+06	1.81E+04	1.79E+04	1.00E-08	4.39E-13
Cesium (55)	Cs-138m	1.25E+05	5.54E-06	1.11E+11	1.33E+09	1.31E+09	1.00E-08	2.81E-09
Cesium (55)	Cs-139	3.93E+04	1.76E-05	4.30E+06	9.88E+05	8.04E+05	1.00E-08	5.52E-12
Cesium (55)	Cs-140	3.43E+05	2.02E-06	9.91E+05	5.49E+05	3.53E+05	1.00E-08	2.80E-13
Copper (29)	Cu-57	1.11E+08	6.22E-09	1.43E+09	2.26E+08	1.95E+08	1.00E-08	1.94E-13
Copper (29)	Cu-59	2.68E+05	2.58E-06	8.38E+12	9.89E+15	8.38E+12	1.00E-08	3.58E-06
Copper (29)	Cu-60	1.54E+04	4.51E-05	1.67E+12	9.23E+09	9.18E+09	1.00E-08	6.95E-08
Copper (29)	Cu-61	1.82E+03	3.80E-04	2.10E+05	8.38E+03	8.05E+03	1.00E-08	5.23E-13
Copper (29)	Cu-62	3.77E+04	1.84E-05		3.64E+14	3.64E+14	1.00E-08	1.16E-03
Copper (29)	Cu-64	4.78E+02	1.45E-03	5.19E+04	1.01E+04	8.43E+03	1.00E-08	2.19E-12
Copper (29)	Cu-66	7.11E+04	9.74E-06		6.30E+16	6.30E+16	1.00E-08	1.13E-01
Copper (29)	Cu-67	9.82E+01	7.06E-03	3.98E+03	3.50E+03	1.86E+03	1.00E-08	2.47E-12
Copper (29)	Cu-69	1.28E+05	5.42E-06	5.55E+07	2.29E+07	1.62E+07	1.00E-08	1.70E-11
Dysprosium (66)	Dy-148	1.10E+05	6.28E-06	2.34E+06	1.83E+05	1.70E+05	1.00E-08	4.42E-13
Dysprosium (66)	Dy-149	8.67E+04	7.99E-06	1.43E+06	2.45E+05	2.09E+05	1.00E-08	6.98E-13
Dysprosium (66)	Dy-150	5.08E+04	1.36E-05	7.43E+05	8.29E+04	7.46E+04	1.00E-08	4.27E-13
Dysprosium (66)	Dy-151	2.03E+04	3.41E-05	4.69E+05	7.60E+04	6.54E+04	1.00E-08	9.42E-13
Dysprosium (66)	Dy-152	2.55E+03	2.72E-04	4.22E+04	5.78E+03	5.09E+03	1.00E-08	5.88E-13
Dysprosium (66)	Dy-153	9.49E+02	7.31E-04	1.95E+04	3.04E+03	2.63E+03	1.00E-08	8.23E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Dysprosium (66)	Dy-154	2.31E-07	3.00E+06	2.26E-01		2.26E-01	1.04E+06	2.92E-07
Dysprosium (66)	Dy-155	6.13E+02	1.13E-03	1.99E+04	2.96E+03	2.58E+03	1.00E-08	1.26E-12
Dysprosium (66)	Dy-157	7.46E+02	9.29E-04	1.61E+05	8.63E+03	8.19E+03	1.00E-08	3.34E-12
Dysprosium (66)	Dy-159	1.75E+00	3.96E-01	2.67E+02	2.03E+02	1.15E+02	1.00E-08	2.03E-11
Dysprosium (66)	Dy-165	2.60E+03	2.66E-04	3.19E+05	1.40E+05	9.75E+04	1.00E-08	1.20E-11
Dysprosium (66)	Dy-165m	2.90E+05	2.39E-06	3.60E+07	1.59E+07	1.10E+07	1.00E-08	1.22E-11
Dysprosium (66)	Dy-166	7.44E+01	9.32E-03	3.25E+02	1.94E+03	2.78E+02	1.00E-08	1.21E-12
Dysprosium (66)	Dy-167	5.87E+04	1.18E-05	9.00E+06	6.25E+05	5.85E+05	1.00E-08	3.23E-12
Dysprosium (66)	Dy-168	4.19E+04	1.66E-05		4.18E+14	4.18E+14	1.00E-08	3.25E-03
Erbium (68)	Er-154	9.77E+04	7.10E-06	2.97E+08	3.14E+07	2.84E+07	1.00E-08	8.69E-11
Erbium (68)	Er-156	1.87E+04	3.71E-05	2.57E+06	3.50E+04	3.45E+04	1.00E-08	5.60E-13
Erbium (68)	Er-159	1.01E+04	6.85E-05	1.13E+06	2.96E+04	2.88E+04	1.00E-08	8.79E-13
Erbium (68)	Er-161	1.89E+03	3.66E-04	2.59E+05	7.28E+03	7.08E+03	1.00E-08	1.17E-12
Erbium (68)	Er-163	4.86E+03	1.43E-04	2.47E+07	5.25E+05	5.14E+05	1.00E-08	3.35E-11
Erbium (68)	Er-165	5.86E+02	1.18E-03	4.00E+05	6.76E+04	5.78E+04	1.00E-08	3.16E-11
Erbium (68)	Er-167m	9.63E+06	7.19E-08		5.26E+30	5.26E+30	7.94E-06	1.77E+11
Erbium (68)	Er-169	2.69E+01	2.58E-02	9.62E+02	1.44E+06	9.61E+02	1.00E-08	1.17E-11
Erbium (68)	Er-171	8.08E+02	8.58E-04	2.77E+04	8.03E+03	6.22E+03	1.00E-08	2.56E-12
Erbium (68)	Er-172	1.23E+02	5.63E-03	6.01E+02	4.74E+02	2.65E+02	1.00E-08	7.18E-13
Erbium (68)	Er-173	2.54E+05	2.73E-06	1.13E+07	2.46E+06	2.02E+06	1.00E-08	2.67E-12
Einsteinium (99)	Es-249	3.56E+03	1.94E-04	6.68E+04	3.50E+04	2.30E+04	1.00E-08	3.11E-12
Einsteinium (99)	Es-250	7.06E+02	9.82E-04	1.09E+03	2.36E+03	7.47E+02	1.00E-08	5.13E-13
Einsteinium (99)	Es-250m	2.73E+03	2.53E-04	4.38E+03	2.02E+04	3.60E+03	1.00E-08	6.39E-13
Einsteinium (99)	Es-251	1.84E+02	3.77E-03	5.42E+03	8.29E+03	3.28E+03	1.00E-08	8.68E-12
Einsteinium (99)	Es-253	1.24E+01	5.61E-02	2.45E+01	7.00E+04	2.45E+01	1.00E-08	9.73E-13
Einsteinium (99)	Es-254	9.17E-01	7.55E-01	6.18E-01	6.65E+00	5.65E-01	1.00E-08	3.04E-13
Einsteinium (99)	Es-254m	1.54E+02	4.49E-03	1.57E+02	1.20E+03	1.39E+02	1.00E-08	4.42E-13
Einsteinium (99)	Es-255	6.36E+00	1.09E-01	9.96E+00	1.61E+03	9.90E+00	1.00E-08	7.71E-13
Einsteinium (99)	Es-256	1.43E+04	4.83E-05	9.22E+03	4.59E+03	3.06E+03	1.00E-08	1.06E-13
Europium (63)	Eu-142	9.34E+06	7.42E-08	1.13E+10	5.39E+08	5.14E+08	1.00E-08	1.52E-11
Europium (63)	Eu-142m	2.98E+05	2.33E-06	2.16E+07	1.03E+06	9.87E+05	1.00E-08	9.13E-13
Europium (63)	Eu-143	1.41E+05	4.93E-06	1.30E+07	2.88E+06	2.36E+06	1.00E-08	4.66E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Europium (63)	Eu-144	2.14E+06	3.23E-07		1.83E+25	1.83E+25	1.00E-08	2.38E+06
Europium (63)	Eu-145	4.27E+01	1.62E-02	7.34E+02	1.32E+02	1.12E+02	1.00E-08	7.39E-13
Europium (63)	Eu-146	5.49E+01	1.26E-02	6.06E+02	9.18E+01	7.97E+01	1.00E-08	4.12E-13
Europium (63)	Eu-147	1.05E+01	6.60E-02	3.16E+02	8.98E+01	6.99E+01	1.00E-08	1.90E-12
Europium (63)	Eu-148	4.64E+00	1.49E-01	4.82E+01	8.36E+00	7.13E+00	1.00E-08	4.41E-13
Europium (63)	Eu-149	2.72E+00	2.55E-01	2.41E+02	1.86E+02	1.05E+02	1.00E-08	1.12E-11
Europium (63)	Eu-150	1.88E-02	3.69E+01	1.08E+01	2.57E+00	2.08E+00	1.00E-08	3.22E-11
Europium (63)	Eu-150m	4.74E+02	1.46E-03	1.65E+04	2.54E+04	1.00E+04	1.00E-08	6.15E-12
Europium (63)	Eu-152	5.12E-02	1.35E+01	1.02E+01	3.53E+00	2.62E+00	1.00E-08	1.51E-11
Europium (63)	Eu-152m	6.52E+02	1.06E-03	1.75E+04	7.27E+03	5.13E+03	1.00E-08	2.32E-12
Europium (63)	Eu-152n	3.79E+03	1.83E-04	6.35E+05	1.19E+05	1.00E+05	1.00E-08	7.79E-12
Europium (63)	Eu-154	8.06E-02	8.59E+00	7.06E+00	3.33E+00	2.26E+00	1.00E-08	8.39E-12
Europium (63)	Eu-154m	7.92E+03	8.75E-05	6.59E+05	1.97E+05	1.52E+05	1.00E-08	5.73E-12
Europium (63)	Eu-155	1.46E-01	4.76E+00	4.32E+01	7.47E+01	2.74E+01	1.00E-08	5.66E-11
Europium (63)	Eu-156	1.67E+01	4.16E-02	9.72E+01	5.38E+01	3.46E+01	1.00E-08	6.29E-13
Europium (63)	Eu-157	4.00E+02	1.73E-03	8.71E+03	4.91E+03	3.14E+03	1.00E-08	2.39E-12
Europium (63)	Eu-158	7.94E+03	8.73E-05	1.16E+06	2.29E+04	2.24E+04	1.00E-08	8.67E-13
Europium (63)	Eu-159	2.01E+04	3.44E-05	5.33E+05	1.08E+06	3.57E+05	1.00E-08	5.47E-12
Fluorine (9)	F-17	3.39E+05	2.04E-06		2.34E+20	2.34E+20	1.00E-08	2.28E+01
Fluorine (9)	F-18	3.32E+03	2.09E-04	9.28E+05	1.46E+04	1.43E+04	1.00E-08	1.51E-13
Iron (26)	Fe-52	7.34E+02	9.45E-04	6.62E+03	8.79E+02	7.76E+02	1.00E-08	1.07E-13
Iron (26)	Fe-53	4.28E+04	1.62E-05	1.02E+14	5.38E+14	8.61E+13	1.00E-08	2.07E-04
Iron (26)	Fe-53m	1.44E+05	4.81E-06	3.45E+14	1.27E+15	2.71E+14	1.00E-08	1.94E-04
Iron (26)	Fe-55	2.53E-01	2.74E+00	4.57E+01	2.92E+10	4.57E+01	1.00E-08	1.93E-11
Iron (26)	Fe-59	5.68E+00	1.22E-01	4.26E+01	1.94E+01	1.33E+01	1.00E-08	2.69E-13
Iron (26)	Fe-60	4.62E-07	1.50E+06	1.12E-01	1.63E+00	1.05E-01	7.63E+01	2.64E-08
Iron (26)	Fe-61	6.09E+04	1.14E-05	1.08E+07	1.68E+06	1.45E+06	1.00E-08	2.82E-12
Iron (26)	Fe-62	3.21E+05	2.16E-06		1.51E+19	1.51E+19	1.00E-08	5.64E+00
Fermium (100)	Fm-251	1.15E+03	6.05E-04	2.93E+04	1.92E+04	1.16E+04	1.00E-08	4.94E-12
Fermium (100)	Fm-252	2.39E+02	2.90E-03	1.66E+02	6.37E+05	1.66E+02	1.00E-08	3.40E-13
Fermium (100)	Fm-253	8.43E+01	8.22E-03	1.57E+02	5.57E+03	1.52E+02	1.00E-08	8.88E-13
Fermium (100)	Fm-254	1.87E+03	3.70E-04	2.86E+03	9.06E+05	2.85E+03	1.00E-08	7.50E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Fermium (100)	Fm-255	3.02E+02	2.29E-03	1.43E+03	1.57E+05	1.42E+03	1.00E-08	2.32E-12
Fermium (100)	Fm-256	2.31E+03	3.00E-04	1.49E+03	7.40E+02	4.94E+02	1.00E-08	1.06E-13
Fermium (100)	Fm-257	2.52E+00	2.75E-01	1.53E+00	7.61E+01	1.50E+00	1.00E-08	2.97E-13
Francium (87)	Fr-212	1.82E+04	3.81E-05	7.54E+02	5.58E+04	7.44E+02	1.00E-08	1.68E-14
Francium (87)	Fr-219	1.09E+09	6.34E-10		6.30E+21	6.30E+21	1.00E-08	2.45E+00
Francium (87)	Fr-220	7.98E+05	8.69E-07	4.07E+07	2.46E+06	2.32E+06	1.00E-08	1.24E-12
Francium (87)	Fr-221	7.43E+04	9.32E-06	3.90E+06	1.67E+06	1.17E+06	1.00E-08	6.74E-12
Francium (87)	Fr-222	2.57E+04	2.70E-05	6.18E+03	8.41E+07	6.18E+03	1.61E+00	1.04E-13
Francium (87)	Fr-223	1.66E+04	4.19E-05	2.14E+03	1.58E+05	2.11E+03	1.00E-08	5.52E-14
Francium (87)	Fr-224	1.09E+05	6.34E-06	2.06E+04	3.01E+05	1.93E+04	1.00E-08	7.67E-14
Francium (87)	Fr-227	1.47E+05	4.70E-06	1.46E+05	3.52E+07	1.45E+05	2.15E-01	4.35E-13
Gallium (31)	Ga-64	1.39E+05	5.00E-06		2.68E+17	2.68E+17	1.00E-08	2.40E-01
Gallium (31)	Ga-65	2.40E+04	2.89E-05	1.27E+05	2.59E+05	8.50E+04	1.00E-08	4.48E-13
Gallium (31)	Ga-66	6.40E+02	1.08E-03	7.25E+03	1.06E+03	9.25E+02	1.00E-08	1.85E-13
Gallium (31)	Ga-67	7.76E+01	8.93E-03	5.29E+03	2.03E+03	1.47E+03	1.00E-08	2.46E-12
Gallium (31)	Ga-68	5.38E+03	1.29E-04	7.05E+05	2.02E+04	1.97E+04	1.00E-08	4.82E-13
Gallium (31)	Ga-70	1.72E+04	4.02E-05	3.25E+13	3.38E+12	3.06E+12	1.00E-08	2.41E-05
Gallium (31)	Ga-72	4.31E+02	1.61E-03	5.14E+03	6.51E+02	5.77E+02	1.00E-08	1.87E-13
Gallium (31)	Ga-73	1.25E+03	5.55E-04	6.32E+04	1.26E+04	1.05E+04	1.00E-08	1.19E-12
Gallium (31)	Ga-74	4.49E+04	1.54E-05		2.69E+14	2.69E+14	1.00E-08	8.61E-04
Gadolinium (64)	Gd-142	3.11E+05	2.23E-06	2.26E+07	1.08E+06	1.03E+06	1.00E-08	9.13E-13
Gadolinium (64)	Gd-143m	1.99E+05	3.49E-06	1.84E+07	4.08E+06	3.34E+06	1.00E-08	4.66E-12
Gadolinium (64)	Gd-144	8.15E+04	8.50E-06		3.70E+16	3.70E+16	1.00E-08	1.27E-01
Gadolinium (64)	Gd-145	1.58E+04	4.38E-05	2.72E+05	4.90E+04	4.15E+04	1.00E-08	7.38E-13
Gadolinium (64)	Gd-145m	2.57E+05	2.70E-06	4.42E+06	7.95E+05	6.74E+05	1.00E-08	7.38E-13
Gadolinium (64)	Gd-146	5.24E+00	1.32E-01	3.25E+01	8.02E+00	6.43E+00	1.00E-08	3.48E-13
Gadolinium (64)	Gd-147	1.59E+02	4.35E-03	1.96E+03	3.42E+02	2.91E+02	1.00E-08	5.21E-13
Gadolinium (64)	Gd-148	9.29E-03	7.46E+01	2.45E-01		2.45E-01	1.00E-08	7.59E-12
Gadolinium (64)	Gd-149	2.73E+01	2.54E-02	5.23E+02	1.86E+02	1.37E+02	1.00E-08	1.46E-12
Gadolinium (64)	Gd-150	3.87E-07	1.79E+06	2.55E-01		2.55E-01	1.00E-08	1.92E-07
Gadolinium (64)	Gd-151	2.04E+00	3.40E-01	1.38E+02	1.42E+02	7.01E+01	1.00E-08	1.01E-11
Gadolinium (64)	Gd-152	6.42E-15	1.08E+14	3.26E-01		3.26E-01	2.17E-07	1.50E+01

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Gadolinium (64)	Gd-153	1.05E+00	6.59E-01	7.74E+01	6.58E+01	3.56E+01	1.00E-08	1.00E-11
Gadolinium (64)	Gd-159	3.29E+02	2.11E-03	8.69E+03	1.77E+04	5.83E+03	1.00E-08	5.47E-12
Gadolinium (64)	Gd-162	4.34E+04	1.60E-05		7.99E+13	7.99E+13	1.00E-08	5.79E-04
Germanium (32)	Ge-66	2.69E+03	2.58E-04	2.80E+04	3.47E+03	3.09E+03	1.00E-08	1.47E-13
Germanium (32)	Ge-67	1.93E+04	3.60E-05	1.31E+06	5.05E+05	3.65E+05	1.00E-08	2.46E-12
Germanium (32)	Ge-68	9.34E-01	7.42E-01	1.49E+01	5.78E+00	4.16E+00	3.71E-05	5.88E-13
Germanium (32)	Ge-69	1.55E+02	4.46E-03	9.99E+03	6.48E+02	6.09E+02	1.00E-08	5.24E-13
Germanium (32)	Ge-71	2.21E+01	3.13E-02	2.51E+04	2.27E+06	2.48E+04	1.00E-08	1.54E-10
Germanium (32)	Ge-75	4.40E+03	1.57E-04	1.27E+06	2.26E+05	1.92E+05	1.00E-08	6.34E-12
Germanium (32)	Ge-77	5.37E+02	1.29E-03	9.94E+03	1.84E+03	1.55E+03	1.00E-08	4.32E-13
Germanium (32)	Ge-78	4.14E+03	1.67E-04	1.78E+05	9.72E+03	9.22E+03	1.00E-08	3.37E-13
Hydrogen (1)	H-3	5.63E-02	1.23E+01	3.28E+02		3.28E+02	1.00E-08	3.39E-11
Hafnium (72)	Hf-167	1.78E+05	3.90E-06	3.72E+06	3.50E+05	3.20E+05	1.00E-08	5.84E-13
Hafnium (72)	Hf-169	1.12E+05	6.16E-06	1.11E+06	2.82E+05	2.25E+05	1.00E-08	6.55E-13
Hafnium (72)	Hf-170	3.79E+02	1.83E-03	3.66E+03	5.32E+02	4.65E+02	1.00E-08	4.04E-13
Hafnium (72)	Hf-172	3.71E-01	1.87E+00	6.76E+00	2.38E+00	1.76E+00	2.71E-02	1.58E-12
Hafnium (72)	Hf-173	2.57E+02	2.69E-03	9.32E+03	2.25E+03	1.81E+03	1.00E-08	2.37E-12
Hafnium (72)	Hf-174	3.47E-16	2.00E+15	5.24E-02		5.24E-02	2.92E-07	5.11E+01
Hafnium (72)	Hf-175	3.61E+00	1.92E-01	1.23E+02	4.23E+01	3.15E+01	1.00E-08	2.96E-12
Hafnium (72)	Hf-177m	7.09E+03	9.78E-05	1.14E+06	1.25E+04	1.23E+04	1.00E-08	5.98E-13
Hafnium (72)	Hf-178m	2.24E-02	3.10E+01	3.40E+00	1.80E+00	1.18E+00	1.00E-08	1.82E-11
Hafnium (72)	Hf-179m	1.01E+01	6.86E-02	1.06E+02	4.40E+01	3.11E+01	1.00E-08	1.07E-12
Hafnium (72)	Hf-180m	1.10E+03	6.28E-04	8.63E+04	4.45E+03	4.23E+03	1.00E-08	1.34E-12
Hafnium (72)	Hf-181	5.97E+00	1.16E-01	7.20E+01	4.47E+01	2.76E+01	1.00E-08	1.62E-12
Hafnium (72)	Hf-182	7.70E-08	9.00E+06	3.07E+00	2.65E+00	1.42E+00	6.90E+00	6.53E-06
Hafnium (72)	Hf-182m	5.92E+03	1.17E-04	9.51E+04	1.48E+04	1.28E+04	1.00E-08	7.66E-13
Hafnium (72)	Hf-183	5.69E+03	1.22E-04	5.34E+04	2.04E+04	1.48E+04	1.00E-08	9.23E-13
Hafnium (72)	Hf-184	1.47E+03	4.70E-04	1.65E+04	3.16E+03	2.65E+03	1.00E-08	6.43E-13
Mercury (80)	Hg-190	1.82E+04	3.81E-05	5.70E+06	3.23E+04	3.22E+04	1.00E-08	6.51E-13
Mercury (80)	Hg-191m	7.17E+03	9.67E-05	1.93E+05	1.22E+04	1.15E+04	1.00E-08	5.93E-13
Mercury (80)	Hg-192	1.25E+03	5.54E-04	4.17E+04	2.37E+03	2.24E+03	1.00E-08	6.68E-13
Mercury (80)	Hg-193	1.60E+03	4.34E-04	8.99E+04	6.50E+03	6.07E+03	1.00E-08	1.42E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Mercury (80)	Hg-193m	5.14E+02	1.35E-03	1.21E+04	1.47E+03	1.31E+03	1.00E-08	9.53E-13
Mercury (80)	Hg-194	1.58E-03	4.40E+02	7.43E+00	3.97E+00	2.59E+00	3.85E-02	6.18E-10
Mercury (80)	Hg-195	5.77E+02	1.20E-03	2.57E+04	9.29E+03	6.83E+03	1.00E-08	4.48E-12
Mercury (80)	Hg-195m	1.46E+02	4.75E-03	2.42E+03	1.65E+03	9.80E+02	1.00E-08	2.54E-12
Mercury (80)	Hg-197	9.35E+01	7.41E-03	5.00E+03	5.75E+03	2.67E+03	1.00E-08	1.09E-11
Mercury (80)	Hg-197m	2.55E+02	2.72E-03	4.80E+03	6.85E+03	2.82E+03	1.00E-08	4.23E-12
Mercury (80)	Hg-199m	8.54E+03	8.12E-05	3.72E+06	1.95E+05	1.85E+05	1.00E-08	8.38E-12
Mercury (80)	Hg-203	5.43E+00	1.28E-01	1.35E+02	9.20E+01	5.47E+01	1.00E-08	3.97E-12
Mercury (80)	Hg-205	7.00E+04	9.89E-06		1.87E+17	1.87E+17	1.00E-08	1.06E+00
Mercury (80)	Hg-206	4.47E+04	1.55E-05		2.74E+15	2.74E+15	1.00E-08	2.45E-02
Mercury (80)	Hg-207	1.26E+05	5.52E-06		4.84E+17	4.84E+17	1.00E-08	1.55E+00
Holmium (67)	Ho-150	2.85E+05	2.44E-06	4.16E+06	4.64E+05	4.18E+05	1.00E-08	4.27E-13
Holmium (67)	Ho-153	1.81E+05	3.82E-06	3.73E+06	5.79E+05	5.01E+05	1.00E-08	8.21E-13
Holmium (67)	Ho-153m	3.92E+04	1.77E-05	8.06E+05	1.25E+05	1.08E+05	1.00E-08	8.22E-13
Holmium (67)	Ho-154	3.10E+04	2.24E-05	8.89E+09	3.40E+08	3.28E+08	1.00E-08	3.16E-09
Holmium (67)	Ho-154m	1.17E+05	5.90E-06	1.15E+11	1.63E+17	1.15E+11	1.04E+06	2.92E-07
Holmium (67)	Ho-155	7.59E+03	9.13E-05	2.25E+05	2.08E+04	1.91E+04	1.00E-08	7.55E-13
Holmium (67)	Ho-156	6.50E+03	1.07E-04	8.93E+05	1.22E+04	1.20E+04	1.00E-08	5.60E-13
Holmium (67)	Ho-157	2.89E+04	2.40E-05	6.24E+06	3.34E+05	3.17E+05	1.00E-08	3.34E-12
Holmium (67)	Ho-159	1.10E+04	6.29E-05	1.53E+06	1.07E+05	1.00E+05	1.00E-08	2.81E-12
Holmium (67)	Ho-160	1.42E+04	4.87E-05	2.00E+12	6.04E+09	6.02E+09	1.00E-08	1.31E-07
Holmium (67)	Ho-161	2.45E+03	2.83E-04	2.60E+06	1.90E+05	1.77E+05	1.00E-08	2.25E-11
Holmium (67)	Ho-162	2.43E+04	2.85E-05	4.31E+16	2.59E+14	2.58E+14	1.00E-08	3.34E-03
Holmium (67)	Ho-162m	5.44E+03	1.27E-04	2.65E+06	3.35E+04	3.31E+04	1.00E-08	1.91E-12
Holmium (67)	Ho-163	1.52E-04	4.57E+03	4.64E+03		4.64E+03	1.00E-08	9.68E-06
Holmium (67)	Ho-164	1.26E+04	5.52E-05	5.71E+11	4.51E+10	4.18E+10	1.00E-08	1.06E-06
Holmium (67)	Ho-164m	9.59E+03	7.23E-05	4.91E+06	4.98E+05	4.52E+05	1.00E-08	1.50E-11
Holmium (67)	Ho-166	2.27E+02	3.06E-03	2.16E+03	8.01E+03	1.70E+03	1.00E-08	2.42E-12
Holmium (67)	Ho-166m	5.78E-04	1.20E+03	6.78E+00	2.45E+00	1.80E+00	1.00E-08	1.00E-09
Holmium (67)	Ho-167	1.96E+03	3.54E-04	3.00E+05	2.08E+04	1.95E+04	1.00E-08	3.23E-12
Holmium (67)	Ho-168	1.22E+05	5.69E-06		1.06E+18	1.06E+18	1.00E-08	2.83E+00
Holmium (67)	Ho-168m	1.66E+05	4.19E-06		4.96E+17	4.96E+17	1.00E-08	9.77E-01

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Holmium (67)	Ho-170	1.32E+05	5.25E-06		5.71E+17	5.71E+17	1.00E-08	1.43E+00
Iodine (53)	I-118	2.66E+04	2.61E-05	1.17E+05	1.13E+05	5.74E+04	1.00E-08	4.94E-13
Iodine (53)	I-118m	4.29E+04	1.62E-05	1.88E+05	1.82E+05	9.25E+04	1.00E-08	4.94E-13
Iodine (53)	I-119	1.91E+04	3.63E-05	9.58E+05	9.62E+04	8.74E+04	1.00E-08	1.06E-12
Iodine (53)	I-120	4.46E+03	1.55E-04	2.05E+05	6.64E+03	6.43E+03	1.00E-08	3.35E-13
Iodine (53)	I-120m	6.87E+03	1.01E-04	5.93E+05	7.60E+03	7.50E+03	1.00E-08	2.54E-13
Iodine (53)	I-121	2.86E+03	2.42E-04	7.15E+04	1.16E+04	1.00E+04	1.00E-08	8.21E-13
Iodine (53)	I-122	1.00E+05	6.91E-06		1.10E+18	1.10E+18	1.00E-08	2.59E+00
Iodine (53)	I-123	4.57E+02	1.51E-03	2.77E+04	1.11E+04	7.94E+03	1.00E-08	4.14E-12
Iodine (53)	I-124	6.06E+01	1.14E-02	6.18E+01	2.16E+02	4.81E+01	1.00E-08	1.91E-13
Iodine (53)	I-125	4.26E+00	1.63E-01	3.72E+00	5.07E+02	3.70E+00	1.00E-08	2.11E-13
Iodine (53)	I-126	1.96E+01	3.54E-02	8.92E+00	1.73E+02	8.49E+00	1.00E-08	1.06E-13
Iodine (53)	I-128	1.46E+04	4.75E-05	1.10E+12	9.13E+10	8.43E+10	1.00E-08	1.44E-06
Iodine (53)	I-129	4.41E-08	1.57E+07	1.24E-01	1.88E+02	1.24E-01	1.00E-08	7.01E-07
Iodine (53)	I-130	4.91E+02	1.41E-03	3.51E+03	8.98E+02	7.15E+02	1.00E-08	3.67E-13
Iodine (53)	I-130m	4.12E+04	1.68E-05	3.51E+05	8.97E+04	7.14E+04	1.00E-08	4.37E-13
Iodine (53)	I-131	3.15E+01	2.20E-02	1.94E+01	3.24E+02	1.83E+01	1.00E-08	1.48E-13
Iodine (53)	I-132	2.65E+03	2.62E-04	1.24E+05	4.55E+03	4.39E+03	1.00E-08	4.25E-13
Iodine (53)	I-132m	4.38E+03	1.58E-04	1.32E+05	7.45E+03	7.05E+03	1.00E-08	4.13E-13
Iodine (53)	I-133	2.92E+02	2.37E-03	9.03E+02	1.65E+03	5.83E+02	1.00E-08	5.16E-13
Iodine (53)	I-134	6.94E+03	9.99E-05	9.18E+05	1.04E+04	1.03E+04	1.00E-08	3.87E-13
Iodine (53)	I-134m	1.01E+05	6.85E-06	1.37E+07	1.56E+05	1.54E+05	1.00E-08	3.96E-13
Iodine (53)	I-135	9.24E+02	7.50E-04	1.40E+04	1.94E+03	1.70E+03	1.00E-08	4.82E-13
Indium (49)	In-103	3.64E+05	1.90E-06	2.09E+07	1.68E+06	1.55E+06	1.00E-08	8.52E-13
Indium (49)	In-105	7.18E+04	9.65E-06	1.91E+06	1.61E+05	1.48E+05	1.00E-08	4.20E-13
Indium (49)	In-106	5.87E+04	1.18E-05		1.49E+15	1.49E+15	1.00E-08	5.21E-03
Indium (49)	In-106m	7.00E+04	9.89E-06		4.49E+15	4.49E+15	1.00E-08	1.32E-02
Indium (49)	In-107	1.12E+04	6.16E-05	1.46E+06	2.90E+04	2.84E+04	1.00E-08	5.25E-13
Indium (49)	In-108	6.28E+03	1.10E-04	1.08E+06	6.43E+03	6.39E+03	1.00E-08	2.13E-13
Indium (49)	In-108m	9.20E+03	7.53E-05	1.52E+06	1.37E+04	1.36E+04	1.00E-08	3.09E-13
Indium (49)	In-109	1.45E+03	4.79E-04	2.14E+04	9.02E+03	6.34E+03	1.00E-08	9.28E-13
Indium (49)	In-109m	2.72E+05	2.55E-06	4.02E+06	1.69E+06	1.19E+06	1.00E-08	9.25E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Indium (49)	In-110	1.24E+03	5.59E-04	6.76E+04	1.59E+03	1.55E+03	1.00E-08	2.68E-13
Indium (49)	In-110m	5.27E+03	1.31E-04	6.91E+05	1.27E+04	1.25E+04	1.00E-08	5.07E-13
Indium (49)	In-111	9.02E+01	7.68E-03	4.13E+03	9.16E+02	7.50E+02	1.00E-08	1.79E-12
Indium (49)	In-111m	4.73E+04	1.46E-05	2.16E+06	4.80E+05	3.93E+05	1.00E-08	1.79E-12
Indium (49)	In-112	2.43E+04	2.85E-05	1.43E+16	1.54E+14	1.52E+14	1.00E-08	1.36E-03
Indium (49)	In-112m	1.77E+04	3.91E-05	3.31E+13	5.00E+11	4.93E+11	1.00E-08	6.05E-06
Indium (49)	In-113m	3.66E+03	1.89E-04	1.69E+06	5.58E+04	5.40E+04	1.00E-08	3.23E-12
Indium (49)	In-114	3.04E+05	2.28E-06		2.37E+21	2.37E+21	1.00E-08	1.73E+03
Indium (49)	In-114m	5.11E+00	1.36E-01	1.66E+01	1.16E+02	1.45E+01	1.00E-08	6.28E-13
Indium (49)	In-115	1.57E-15	4.41E+14	4.09E-01	1.11E+04	4.09E-01	1.24E-07	5.80E+01
Indium (49)	In-115m	1.35E+03	5.12E-04	2.06E+05	3.34E+04	2.87E+04	1.00E-08	4.73E-12
Indium (49)	In-116m	6.69E+03	1.04E-04	1.39E+06	1.11E+04	1.10E+04	1.00E-08	3.69E-13
Indium (49)	In-117	8.43E+03	8.22E-05	3.40E+06	4.75E+04	4.68E+04	1.00E-08	1.26E-12
Indium (49)	In-117m	3.13E+03	2.21E-04	3.00E+05	2.68E+04	2.46E+04	1.00E-08	1.78E-12
Indium (49)	In-118	4.37E+06	1.59E-07		6.36E+27	6.36E+27	1.00E-08	3.33E+08
Indium (49)	In-118m	8.35E+04	8.30E-06		2.05E+16	2.05E+16	1.00E-08	5.62E-02
Indium (49)	In-119	1.52E+05	4.57E-06	1.05E+09	1.06E+10	9.54E+08	1.00E-08	1.45E-09
Indium (49)	In-119m	2.02E+04	3.42E-05	2.50E+09	2.52E+10	2.27E+09	1.00E-08	2.59E-08
Indium (49)	In-121	9.46E+05	7.32E-07	6.17E+07	4.50E+10	6.16E+07	1.00E-08	1.53E-11
Indium (49)	In-121m	9.39E+04	7.38E-06	5.45E+06	4.31E+09	5.44E+06	1.00E-08	1.36E-11
Iridium (77)	Ir-180	2.43E+05	2.85E-06	5.18E+14	1.95E+12	1.94E+12	1.00E-08	2.79E-06
Iridium (77)	Ir-182	2.43E+04	2.85E-05	3.73E+05	5.98E+04	5.15E+04	1.00E-08	7.50E-13
Iridium (77)	Ir-183	6.28E+03	1.10E-04	6.83E+04	1.11E+04	9.57E+03	1.00E-08	5.41E-13
Iridium (77)	Ir-184	1.96E+03	3.53E-04	1.40E+05	4.00E+03	3.89E+03	1.00E-08	7.07E-13
Iridium (77)	Ir-185	4.22E+02	1.64E-03	7.07E+03	1.15E+03	9.87E+02	1.00E-08	8.41E-13
Iridium (77)	Ir-186	3.65E+02	1.90E-03	8.65E+03	8.94E+02	8.10E+02	1.00E-08	8.01E-13
Iridium (77)	Ir-186m	3.16E+03	2.19E-04	1.97E+05	7.73E+03	7.44E+03	1.00E-08	8.49E-13
Iridium (77)	Ir-187	5.78E+02	1.20E-03	6.66E+04	7.08E+03	6.40E+03	1.00E-08	4.02E-12
Iridium (77)	Ir-188	1.46E+02	4.74E-03	2.55E+03	2.95E+02	2.64E+02	1.00E-08	6.59E-13
Iridium (77)	Ir-189	1.92E+01	3.62E-02	1.05E+03	1.07E+03	5.28E+02	1.00E-08	1.01E-11
Iridium (77)	Ir-190	2.15E+01	3.23E-02	2.68E+02	5.75E+01	4.73E+01	1.00E-08	8.13E-13
Iridium (77)	Ir-190m	5.42E+03	1.28E-04	6.73E+04	1.45E+04	1.19E+04	1.00E-08	8.12E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Iridium (77)	Ir-190n	1.97E+03	3.52E-04	1.25E+05	4.76E+03	4.58E+03	1.00E-08	8.59E-13
Iridium (77)	Ir-191m	4.42E+06	1.57E-07		2.63E+28	2.63E+28	1.00E-08	2.20E+09
Iridium (77)	Ir-192	3.43E+00	2.02E-01	3.45E+01	1.71E+01	1.14E+01	1.00E-08	1.24E-12
Iridium (77)	Ir-192m	2.51E+05	2.76E-06	2.53E+06	1.26E+06	8.39E+05	1.00E-08	1.24E-12
Iridium (77)	Ir-192n	2.88E-03	2.41E+02	5.88E+00	4.86E+00	2.66E+00	1.64E+00	3.45E-10
Iridium (77)	Ir-193m	2.40E+01	2.88E-02	1.11E+03	2.83E+05	1.10E+03	1.00E-08	1.72E-11
Iridium (77)	Ir-194	3.15E+02	2.20E-03	3.16E+03	6.52E+03	2.13E+03	1.00E-08	2.55E-12
Iridium (77)	Ir-194m	1.48E+00	4.68E-01	1.24E+01	3.23E+00	2.57E+00	1.00E-08	6.53E-13
Iridium (77)	Ir-195	2.43E+03	2.85E-04	3.21E+05	1.23E+05	8.91E+04	1.00E-08	1.39E-11
Iridium (77)	Ir-195m	1.60E+03	4.34E-04	5.05E+04	1.53E+04	1.18E+04	1.00E-08	2.78E-12
Iridium (77)	Ir-196	4.20E+05	1.65E-06		3.21E+21	3.21E+21	1.00E-08	2.91E+03
Iridium (77)	Ir-196m	4.34E+03	1.60E-04	5.22E+05	6.89E+03	6.80E+03	1.00E-08	5.96E-13
Potassium (19)	K-38	4.77E+04	1.45E-05		6.55E+14	6.55E+14	1.00E-08	1.01E-03
Potassium (19)	K-40	5.54E-10	1.25E+09	2.17E+00	1.84E+01	1.94E+00	1.00E-08	2.72E-04
Potassium (19)	K-42	4.91E+02	1.41E-03	1.50E+04	4.60E+03	3.52E+03	1.00E-08	5.84E-13
Potassium (19)	K-43	2.72E+02	2.55E-03	1.46E+04	1.09E+03	1.02E+03	1.00E-08	3.11E-13
Potassium (19)	K-44	1.65E+04	4.21E-05	4.92E+12	5.17E+10	5.12E+10	1.00E-08	2.65E-07
Potassium (19)	K-45	2.11E+04	3.29E-05	5.03E+05	2.64E+09	5.03E+05	1.00E-08	2.09E-12
Potassium (19)	K-46	2.08E+05	3.33E-06		6.58E+18	6.58E+18	1.00E-08	2.82E+00
Krypton (36)	Kr-74	3.17E+04	2.19E-05	5.72E+11	3.20E+09	3.18E+09	1.00E-08	1.44E-08
Krypton (36)	Kr-75	8.49E+04	8.16E-06	4.83E+05	2.10E+05	1.47E+05	1.00E-08	2.51E-13
Krypton (36)	Kr-76	4.10E+02	1.69E-03	1.18E+04	5.16E+02	4.95E+02	1.00E-08	1.78E-13
Krypton (36)	Kr-77	4.90E+03	1.42E-04	6.69E+05	1.35E+04	1.32E+04	1.00E-08	4.03E-13
Krypton (36)	Kr-79	1.73E+02	4.00E-03		2.74E+03	2.74E+03	1.00E-08	2.42E-12
Krypton (36)	Kr-81	3.03E-06	2.29E+05		2.39E+03	2.39E+03	1.00E-08	1.24E-04
Krypton (36)	Kr-81m	1.67E+06	4.15E-07		1.32E+15	1.32E+15	1.00E-08	1.24E-04
Krypton (36)	Kr-83m	3.32E+03	2.09E-04		3.81E+07	3.81E+07	1.00E-08	1.85E-09
Krypton (36)	Kr-85	6.44E-02	1.08E+01		3.68E+02	3.68E+02	1.00E-08	9.43E-10
Krypton (36)	Kr-85m	1.36E+03	5.11E-04		3.25E+04	3.25E+04	1.00E-08	3.96E-12
Krypton (36)	Kr-87	4.77E+03	1.45E-04	2.96E+15	2.13E+04	2.13E+04	1.00E-08	7.55E-13
Krypton (36)	Kr-88	2.14E+03	3.24E-04	3.15E+05	3.25E+03	3.21E+03	1.00E-08	2.57E-13
Krypton (36)	Kr-89	1.16E+05	5.99E-06	6.05E+05	6.34E+06	5.52E+05	1.00E-08	8.25E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Lanthanum (57)	La-128	7.03E+04	9.86E-06	3.43E+05	2.61E+05	1.48E+05	1.00E-08	5.24E-13
Lanthanum (57)	La-129	3.14E+04	2.21E-05	3.78E+06	1.76E+05	1.68E+05	1.00E-08	1.34E-12
Lanthanum (57)	La-130	4.19E+04	1.66E-05		3.41E+14	3.41E+14	1.00E-08	2.06E-03
Lanthanum (57)	La-131	6.17E+03	1.12E-04	1.49E+05	2.09E+04	1.83E+04	1.00E-08	7.55E-13
Lanthanum (57)	La-132	1.26E+03	5.48E-04	4.13E+04	2.51E+03	2.36E+03	1.00E-08	4.79E-13
Lanthanum (57)	La-132m	1.50E+04	4.62E-05	6.44E+05	3.91E+04	3.69E+04	1.00E-08	6.30E-13
Lanthanum (57)	La-133	1.55E+03	4.47E-04	1.60E+05	3.33E+04	2.75E+04	1.00E-08	4.58E-12
Lanthanum (57)	La-134	5.65E+04	1.23E-05		4.19E+15	4.19E+15	1.00E-08	1.93E-02
Lanthanum (57)	La-135	3.11E+02	2.23E-03	1.34E+05	3.83E+04	2.98E+04	1.00E-08	2.50E-11
Lanthanum (57)	La-136	3.69E+04	1.88E-05		6.61E+14	6.61E+14	1.00E-08	4.72E-03
Lanthanum (57)	La-137	1.16E-05	6.00E+04	1.59E+02	1.86E+02	8.58E+01	1.00E-08	1.98E-06
Lanthanum (57)	La-138	6.79E-12	1.02E+11	1.23E+01	3.35E+00	2.63E+00	1.00E-08	1.04E-01
Lanthanum (57)	La-140	1.51E+02	4.60E-03	1.00E+03	2.63E+02	2.08E+02	1.00E-08	3.75E-13
Lanthanum (57)	La-141	1.55E+03	4.47E-04	1.91E+04	2.77E+04	1.13E+04	1.00E-08	2.00E-12
Lanthanum (57)	La-142	4.00E+03	1.73E-04	3.05E+05	6.94E+03	6.78E+03	1.00E-08	4.67E-13
Lanthanum (57)	La-143	2.57E+04	2.70E-05	1.49E+05	2.99E+05	9.92E+04	1.00E-08	1.07E-12
Lutetium (71)	Lu-165	3.39E+04	2.04E-05	1.19E+06	2.26E+05	1.90E+05	1.00E-08	1.80E-12
Lutetium (71)	Lu-167	7.07E+03	9.80E-05	1.48E+05	1.39E+04	1.27E+04	1.00E-08	5.84E-13
Lutetium (71)	Lu-169	1.78E+02	3.89E-03	1.76E+03	4.47E+02	3.56E+02	1.00E-08	6.56E-13
Lutetium (71)	Lu-169m	1.37E+05	5.07E-06	1.35E+06	3.42E+05	2.73E+05	1.00E-08	6.55E-13
Lutetium (71)	Lu-170	1.26E+02	5.51E-03	1.73E+03	2.08E+02	1.86E+02	1.00E-08	4.88E-13
Lutetium (71)	Lu-171	3.07E+01	2.26E-02	5.94E+02	1.90E+02	1.44E+02	1.00E-08	1.55E-12
Lutetium (71)	Lu-171m	2.77E+05	2.51E-06	5.35E+06	1.71E+06	1.30E+06	1.00E-08	1.55E-12
Lutetium (71)	Lu-172	3.78E+01	1.84E-02	3.79E+02	7.77E+01	6.45E+01	1.00E-08	5.70E-13
Lutetium (71)	Lu-172m	9.84E+04	7.04E-06	9.89E+05	2.03E+05	1.68E+05	1.00E-08	5.70E-13
Lutetium (71)	Lu-173	5.06E-01	1.37E+00	4.65E+01	2.91E+01	1.79E+01	1.00E-08	1.19E-11
Lutetium (71)	Lu-174	2.09E-01	3.31E+00	5.20E+01	4.03E+01	2.27E+01	1.00E-08	3.66E-11
Lutetium (71)	Lu-174m	1.78E+00	3.89E-01	4.93E+01	1.24E+02	3.53E+01	1.00E-08	6.69E-12
Lutetium (71)	Lu-176	1.80E-11	3.85E+10	7.38E+00	8.38E+00	3.93E+00	1.00E-08	7.45E-02
Lutetium (71)	Lu-176m	1.67E+03	4.15E-04	1.35E+05	1.11E+05	6.11E+04	1.00E-08	1.25E-11
Lutetium (71)	Lu-177	3.81E+01	1.82E-02	9.54E+02	4.44E+03	7.86E+02	1.00E-08	7.09E-12
Lutetium (71)	Lu-177m	1.58E+00	4.39E-01	1.46E+01	7.97E+00	5.15E+00	1.00E-08	1.12E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Lutetium (71)	Lu-178	1.28E+04	5.40E-05	1.57E+11	1.02E+10	9.57E+09	1.00E-08	2.58E-07
Lutetium (71)	Lu-178m	1.58E+04	4.39E-05	5.61E+12	5.20E+10	5.16E+10	1.00E-08	1.13E-06
Lutetium (71)	Lu-179	1.32E+03	5.24E-04	8.18E+04	6.23E+04	3.54E+04	1.00E-08	9.29E-12
Lutetium (71)	Lu-180	6.39E+04	1.08E-05		2.12E+16	2.12E+16	1.00E-08	1.16E-01
Lutetium (71)	Lu-181	1.04E+05	6.66E-06	1.26E+06	7.79E+05	4.81E+05	1.00E-08	1.62E-12
Magnesium (12)	Mg-27	3.85E+04	1.80E-05		8.37E+14	8.37E+14	1.00E-08	1.14E-03
Magnesium (12)	Mg-28	2.90E+02	2.39E-03	1.80E+03	3.66E+02	3.04E+02	1.00E-08	5.69E-14
Manganese (25)	Mn-50m	2.08E+05	3.33E-06		3.91E+18	3.91E+18	1.00E-08	1.82E+00
Manganese (25)	Mn-51	7.88E+03	8.79E-05	8.03E+05	2.69E+04	2.60E+04	1.00E-08	3.26E-13
Manganese (25)	Mn-52	4.52E+01	1.53E-02	3.34E+02	5.28E+01	4.56E+01	1.00E-08	1.02E-13
Manganese (25)	Mn-52m	1.73E+04	4.01E-05	7.27E+06	1.15E+06	9.92E+05	1.00E-08	5.80E-12
Manganese (25)	Mn-53	1.87E-07	3.70E+06	4.48E+02		4.48E+02	1.00E-08	2.46E-04
Manganese (25)	Mn-54	8.10E-01	8.55E-01	2.70E+01	6.93E+00	5.52E+00	1.00E-08	7.13E-13
Manganese (25)	Mn-56	2.35E+03	2.94E-04	1.23E+05	5.45E+03	5.21E+03	1.00E-08	2.41E-13
Manganese (25)	Mn-57	2.56E+05	2.71E-06		5.65E+20	5.65E+20	1.00E-08	2.44E+02
Manganese (25)	Mn-58m	3.35E+05	2.07E-06		1.11E+20	1.11E+20	1.00E-08	3.73E+01
Molybdenum (42)	Mo-101	2.49E+04	2.78E-05	3.17E+14	4.47E+12	4.41E+12	1.00E-08	3.47E-05
Molybdenum (42)	Mo-102	3.22E+04	2.15E-05	1.68E+16	1.07E+15	1.00E+15	1.00E-08	6.16E-03
Molybdenum (42)	Mo-89	1.73E+05	4.01E-06	2.18E+06	2.61E+05	2.33E+05	1.00E-08	2.33E-13
Molybdenum (42)	Mo-90	1.09E+03	6.35E-04	9.93E+03	8.97E+02	8.22E+02	1.00E-08	1.32E-13
Molybdenum (42)	Mo-91	2.35E+04	2.95E-05	1.72E+09	6.45E+09	1.36E+09	1.00E-08	1.02E-08
Molybdenum (42)	Mo-91m	3.38E+05	2.05E-06	2.24E+07	9.82E+07	1.82E+07	1.00E-08	9.52E-12
Molybdenum (42)	Mo-93	1.73E-04	4.00E+03	4.51E+00	8.61E+02	4.48E+00	5.24E+01	4.67E-09
Molybdenum (42)	Mo-93m	8.86E+02	7.82E-04	9.83E+04	1.56E+03	1.53E+03	1.00E-08	3.13E-13
Molybdenum (42)	Mo-99	9.21E+01	7.53E-03	1.97E+03	1.25E+03	7.63E+02	1.00E-08	1.59E-12
Nitrogen (7)	N-13	3.66E+04	1.90E-05		2.63E+14	2.63E+14	1.00E-08	1.81E-04
Nitrogen (7)	N-16	3.07E+06	2.26E-07		1.38E+26	1.38E+26	1.00E-08	1.40E+06
Sodium (11)	Na-22	2.66E-01	2.60E+00	4.80E+00	2.08E+00	1.45E+00	1.00E-08	2.33E-13
Sodium (11)	Na-24	4.06E+02	1.71E-03	1.25E+04	4.24E+02	4.10E+02	1.00E-08	4.70E-14
Niobium (41)	Nb-87	9.71E+04	7.13E-06	1.34E+06	1.84E+05	1.61E+05	1.00E-08	2.81E-13
Niobium (41)	Nb-88	2.51E+04	2.76E-05	2.42E+05	4.39E+04	3.72E+04	1.00E-08	2.53E-13
Niobium (41)	Nb-88m	4.68E+04	1.48E-05	4.51E+05	8.18E+04	6.93E+04	1.00E-08	2.53E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Niobium (41)	Nb-89	2.99E+03	2.32E-04	3.78E+04	4.53E+03	4.04E+03	1.00E-08	2.33E-13
Niobium (41)	Nb-89m	5.52E+03	1.26E-04	8.39E+04	6.95E+03	6.42E+03	1.00E-08	2.01E-13
Niobium (41)	Nb-90	4.16E+02	1.67E-03	4.45E+03	4.12E+02	3.77E+02	1.00E-08	1.58E-13
Niobium (41)	Nb-91	1.02E-03	6.80E+02	3.05E+02	7.91E+02	2.20E+02	1.00E-08	3.81E-08
Niobium (41)	Nb-91m	4.16E+00	1.67E-01	1.38E+02	6.04E+02	1.12E+02	1.00E-08	4.76E-12
Niobium (41)	Nb-92	2.00E-08	3.47E+07	1.31E+01	2.64E+00	2.20E+00	1.00E-08	1.96E-05
Niobium (41)	Nb-92m	2.49E+01	2.78E-02	6.63E+02	1.03E+02	8.95E+01	1.00E-08	6.41E-13
Niobium (41)	Nb-93m	4.30E-02	1.61E+01	1.06E+02	5.60E+03	1.04E+02	1.00E-08	4.36E-10
Niobium (41)	Nb-94	3.41E-05	2.03E+04	7.72E+00	2.53E+00	1.91E+00	1.00E-08	1.02E-08
Niobium (41)	Nb-94m	5.82E+04	1.19E-05	1.32E+10	4.33E+09	3.26E+09	1.00E-08	1.02E-08
Niobium (41)	Nb-95	7.23E+00	9.59E-02	1.65E+02	3.73E+01	3.04E+01	1.00E-08	7.76E-13
Niobium (41)	Nb-95m	7.01E+01	9.89E-03	8.06E+02	3.51E+02	2.45E+02	1.00E-08	6.44E-13
Niobium (41)	Nb-96	2.60E+02	2.67E-03	3.16E+03	4.18E+02	3.69E+02	1.00E-08	2.65E-13
Niobium (41)	Nb-97	5.05E+03	1.37E-04	9.79E+05	2.78E+04	2.70E+04	1.00E-08	1.01E-12
Niobium (41)	Nb-98m	7.10E+03	9.76E-05	8.71E+05	9.82E+03	9.71E+03	1.00E-08	2.60E-13
Niobium (41)	Nb-99	1.46E+06	4.76E-07	3.12E+07	1.97E+07	1.21E+07	1.00E-08	1.59E-12
Niobium (41)	Nb-99m	1.40E+05	4.95E-06	3.00E+06	1.89E+06	1.16E+06	1.00E-08	1.59E-12
Neodymium (60)	Nd-134	4.29E+04	1.62E-05	2.15E+05	2.02E+05	1.04E+05	1.00E-08	6.32E-13
Neodymium (60)	Nd-135	2.94E+04	2.36E-05	1.33E+06	1.37E+05	1.24E+05	1.00E-08	1.11E-12
Neodymium (60)	Nd-136	7.19E+03	9.64E-05	7.19E+05	1.15E+04	1.13E+04	1.00E-08	4.16E-13
Neodymium (60)	Nd-137	9.46E+03	7.32E-05	1.08E+06	2.31E+04	2.26E+04	1.00E-08	6.36E-13
Neodymium (60)	Nd-138	1.20E+03	5.75E-04	2.52E+04	4.81E+03	4.04E+03	1.00E-08	8.98E-13
Neodymium (60)	Nd-139	1.23E+04	5.65E-05	6.44E+05	1.88E+05	1.46E+05	1.00E-08	3.20E-12
Neodymium (60)	Nd-139m	1.10E+03	6.28E-04	2.96E+04	2.33E+03	2.16E+03	1.00E-08	5.27E-13
Neodymium (60)	Nd-140	7.51E+01	9.23E-03	5.04E+02	4.61E+02	2.41E+02	1.00E-08	8.72E-13
Neodymium (60)	Nd-141	2.44E+03	2.84E-04	3.78E+06	1.32E+05	1.27E+05	1.00E-08	1.43E-11
Neodymium (60)	Nd-141m	3.52E+05	1.97E-06	5.44E+08	1.89E+07	1.83E+07	1.00E-08	1.42E-11
Neodymium (60)	Nd-144	3.03E-16	2.29E+15	3.28E-01		3.28E-01	3.30E+00	3.02E+02
Neodymium (60)	Nd-147	2.30E+01	3.01E-02	2.70E+02	6.17E+02	1.88E+02	1.00E-08	2.33E-12
Neodymium (60)	Nd-149	3.51E+03	1.97E-04	4.20E+04	3.02E+04	1.76E+04	1.00E-08	1.45E-12
Neodymium (60)	Nd-151	2.93E+04	2.37E-05	5.29E+05	3.35E+05	2.05E+05	1.00E-08	2.05E-12
Neodymium (60)	Nd-152	3.20E+04	2.17E-05	3.65E+16	6.17E+14	6.07E+14	1.00E-08	5.60E-03

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Neon (10)	Ne-19	1.27E+06	5.46E-07		4.20E+24	4.20E+24	1.00E-08	1.22E+05
Neon (10)	Ne-24	1.08E+05	6.43E-06	3.31E+06	1.12E+05	1.08E+05	1.00E-08	4.69E-14
Nickel (28)	Ni-56	4.16E+01	1.66E-02	1.69E+02	3.29E+01	2.75E+01	1.00E-08	7.18E-14
Nickel (28)	Ni-57	1.71E+02	4.06E-03	2.19E+03	3.46E+02	2.99E+02	1.00E-08	1.94E-13
Nickel (28)	Ni-59	6.86E-06	1.01E+05	2.14E+02	2.53E+05	2.14E+02	1.00E-08	3.58E-06
Nickel (28)	Ni-63	6.92E-03	1.00E+02	8.65E+01		8.65E+01	1.00E-08	1.53E-09
Nickel (28)	Ni-65	2.41E+03	2.87E-04	1.77E+05	1.57E+04	1.44E+04	1.00E-08	7.53E-13
Nickel (28)	Ni-66	1.11E+02	6.23E-03	4.90E+02	1.94E+03	3.91E+02	1.00E-08	4.51E-13
Neptunium (93)	Np-232	2.48E+04	2.80E-05	7.54E+04	7.50E+06	7.47E+04	6.38E+00	1.36E-12
Neptunium (93)	Np-233	1.01E+04	6.89E-05	5.20E+07	4.88E+05	5.19E+07	3.35E+04	2.33E-09
Neptunium (93)	Np-234	5.75E+01	1.21E-02	1.19E+03	2.16E+02	1.83E+02	1.00E-08	1.44E-12
Neptunium (93)	Np-235	6.39E-01	1.09E+00	3.19E+02	2.35E+03	2.81E+02	1.00E-08	2.01E-10
Neptunium (93)	Np-236	4.50E-06	1.54E+05	1.39E-01	1.24E+01	1.38E-01	7.07E+02	1.40E-08
Neptunium (93)	Np-236m	2.70E+02	2.57E-03	3.78E+02	2.33E+04	3.72E+02	1.00E-08	6.31E-13
Neptunium (93)	Np-237	3.23E-07	2.14E+06	2.07E-02	8.11E+00	2.06E-02	6.25E+05	2.93E-08
Neptunium (93)	Np-238	1.19E+02	5.80E-03	5.97E+02	7.95E+02	3.41E+02	1.00E-08	1.32E-12
Neptunium (93)	Np-239	1.07E+02	6.46E-03	1.75E+03	2.48E+03	1.03E+03	1.00E-08	4.43E-12
Neptunium (93)	Np-240	5.88E+03	1.18E-04	7.95E+05	2.21E+04	2.15E+04	1.00E-08	1.70E-12
Neptunium (93)	Np-240m	5.04E+04	1.37E-05	2.54E+07	5.47E+09	2.53E+07	1.00E-08	2.34E-10
Neptunium (93)	Np-241	2.62E+04	2.64E-05	1.16E+06	3.16E+09	1.16E+06	4.85E+01	2.07E-11
Neptunium (93)	Np-242	1.66E+05	4.19E-06	5.01E+09	6.04E+14	5.01E+09	1.00E-08	1.42E-08
Neptunium (93)	Np-242m	6.62E+04	1.05E-05	2.00E+09	2.38E+14	2.00E+09	1.00E-08	1.42E-08
Oxygen (8)	O-14	3.10E+05	2.24E-06		1.67E+20	1.67E+20	1.00E-08	1.46E+01
Oxygen (8)	O-15	1.79E+05	3.88E-06		4.21E+18	4.21E+18	1.00E-08	6.85E-01
Oxygen (8)	O-19	8.26E+05	8.39E-07		9.15E+22	9.15E+22	1.00E-08	4.09E+03
Osmium (76)	Os-180	1.69E+04	4.09E-05	3.88E+13	1.46E+11	1.45E+11	1.00E-08	3.00E-06
Osmium (76)	Os-181	3.47E+03	2.00E-04	7.82E+04	6.34E+03	5.87E+03	1.00E-08	5.94E-13
Osmium (76)	Os-182	2.75E+02	2.52E-03	4.22E+03	6.76E+02	5.83E+02	1.00E-08	7.50E-13
Osmium (76)	Os-183	4.67E+02	1.48E-03	5.36E+03	2.44E+03	1.68E+03	1.00E-08	1.28E-12
Osmium (76)	Os-183m	6.13E+02	1.13E-03	6.95E+03	2.00E+03	1.55E+03	1.00E-08	8.98E-13
Osmium (76)	Os-185	2.70E+00	2.56E-01	7.70E+01	1.66E+01	1.37E+01	1.00E-08	1.81E-12
Osmium (76)	Os-186	3.47E-16	2.00E+15	4.18E-01		4.18E-01	3.57E-08	4.35E+02

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Osmium (76)	Os-189m	1.05E+03	6.62E-04	8.18E+05	9.73E+07	8.11E+05	1.00E-08	2.84E-10
Osmium (76)	Os-190m	3.68E+04	1.88E-05		1.76E+14	1.76E+14	1.00E-08	1.77E-03
Osmium (76)	Os-191	1.64E+01	4.22E-02	3.77E+02	8.66E+02	2.63E+02	1.00E-08	5.93E-12
Osmium (76)	Os-191m	4.63E+02	1.50E-03	9.10E+03	2.28E+04	6.50E+03	1.00E-08	5.20E-12
Osmium (76)	Os-193	2.02E+02	3.44E-03	3.26E+03	8.38E+03	2.35E+03	1.00E-08	4.36E-12
Osmium (76)	Os-194	1.16E-01	6.00E+00	3.72E+00	2.17E+01	3.17E+00	4.45E-03	1.03E-11
Osmium (76)	Os-196	1.04E+04	6.64E-05	1.27E+06	8.63E+04	8.08E+04	1.00E-08	2.95E-12
Phosphorus (15)	P-30	1.46E+05	4.75E-06		1.14E+18	1.14E+18	1.00E-08	4.55E-01
Phosphorus (15)	P-32	1.77E+01	3.91E-02	9.88E+01	8.67E+02	8.87E+01	1.00E-08	3.10E-13
Phosphorus (15)	P-33	9.98E+00	6.94E-02	5.45E+02	1.14E+06	5.44E+02	1.00E-08	3.49E-12
Protactinium (91)	Pa-227	9.51E+03	7.29E-05	7.35E+03	1.83E+05	7.06E+03	1.00E-08	3.27E-13
Protactinium (91)	Pa-228	2.76E+02	2.51E-03	8.32E+01	6.12E+02	7.33E+01	1.00E-08	1.17E-13
Protactinium (91)	Pa-229	1.69E+02	4.11E-03	6.86E+03	1.13E+04	4.27E+03	1.00E-08	1.13E-11
Protactinium (91)	Pa-230	1.45E+01	4.77E-02	2.33E+01	8.74E+01	1.84E+01	1.00E-08	5.64E-13
Protactinium (91)	Pa-231	2.12E-05	3.28E+04	1.47E-02	6.97E+00	1.47E-02	2.09E+02	3.11E-10
Protactinium (91)	Pa-232	1.93E+02	3.59E-03	5.88E+02	8.20E+02	3.50E+02	1.00E-08	8.16E-13
Protactinium (91)	Pa-233	9.38E+00	7.39E-02	1.30E+02	1.74E+02	7.43E+01	1.00E-08	3.58E-12
Protactinium (91)	Pa-234	9.06E+02	7.65E-04	2.89E+04	2.46E+03	2.27E+03	1.00E-08	1.14E-12
Protactinium (91)	Pa-234m	3.11E+05	2.23E-06	1.01E+09	5.21E+08	4.73E+08	1.00E-08	6.90E-10
Protactinium (91)	Pa-235	1.49E+04	4.66E-05	2.10E+11	3.83E+11	2.10E+11	4.49E+05	6.43E-06
Protactinium (91)	Pa-236	4.00E+04	1.73E-05	3.88E+11	1.39E+15	3.88E+11	1.00E-08	4.44E-06
Protactinium (91)	Pa-237	4.19E+04	1.66E-05	7.20E+05	1.27E+06	4.60E+05	1.00E-08	5.05E-12
Lead (82)	Pb-194	3.04E+04	2.28E-05	8.36E+06	1.23E+05	1.21E+05	1.00E-08	1.50E-12
Lead (82)	Pb-195m	2.43E+04	2.85E-05	9.95E+05	6.78E+04	6.34E+04	1.00E-08	9.89E-13
Lead (82)	Pb-196	9.84E+03	7.04E-05	1.68E+06	1.69E+04	1.68E+04	1.00E-08	6.48E-13
Lead (82)	Pb-197	4.55E+04	1.52E-05	2.23E+06	3.53E+05	3.05E+05	1.00E-08	2.56E-12
Lead (82)	Pb-197m	8.47E+03	8.18E-05	3.56E+05	1.72E+04	1.64E+04	1.00E-08	7.39E-13
Lead (82)	Pb-198	2.53E+03	2.74E-04	2.21E+05	4.26E+03	4.18E+03	1.00E-08	6.35E-13
Lead (82)	Pb-199	4.05E+03	1.71E-04	8.12E+05	1.28E+04	1.26E+04	1.00E-08	1.20E-12
Lead (82)	Pb-200	2.82E+02	2.45E-03	6.41E+03	7.53E+02	6.74E+02	1.00E-08	9.26E-13
Lead (82)	Pb-201	6.51E+02	1.07E-03	3.32E+04	3.11E+03	2.84E+03	1.00E-08	1.70E-12
Lead (82)	Pb-201m	3.58E+05	1.93E-06	1.83E+07	1.71E+06	1.56E+06	1.00E-08	1.70E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Lead (82)	Pb-202	1.32E-05	5.25E+04	8.32E-01	8.66E+00	7.59E-01	4.32E-01	2.25E-08
Lead (82)	Pb-202m	1.72E+03	4.03E-04	1.20E+05	3.34E+03	3.25E+03	1.00E-08	7.40E-13
Lead (82)	Pb-203	1.17E+02	5.92E-03	6.26E+03	1.53E+03	1.23E+03	1.00E-08	4.13E-12
Lead (82)	Pb-204m	5.42E+03	1.28E-04	1.49E+06	1.04E+04	1.03E+04	1.00E-08	7.52E-13
Lead (82)	Pb-205	4.53E-08	1.53E+07	4.93E+01	1.97E+04	4.92E+01	1.00E-08	4.32E-04
Lead (82)	Pb-209	1.87E+03	3.71E-04	4.40E+05	2.44E+06	3.73E+05	1.00E-08	8.10E-11
Lead (82)	Pb-210	3.12E-02	2.22E+01	7.53E-03	1.02E+02	7.53E-03	1.61E+00	9.82E-14
Lead (82)	Pb-211	1.01E+04	6.87E-05	7.58E+05	1.81E+05	1.46E+05	1.00E-08	5.94E-12
Lead (82)	Pb-212	5.71E+02	1.21E-03	1.22E+03	1.58E+03	6.89E+02	1.00E-08	4.96E-13
Lead (82)	Pb-214	1.36E+04	5.10E-05	3.28E+03	4.45E+07	3.28E+03	1.61E+00	1.00E-13
Palladium (46)	Pd-100	6.97E+01	9.95E-03	5.83E+02	1.02E+02	8.68E+01	1.00E-08	2.42E-13
Palladium (46)	Pd-101	7.17E+02	9.67E-04	3.09E+04	4.57E+03	3.98E+03	1.00E-08	1.09E-12
Palladium (46)	Pd-103	1.49E+01	4.66E-02	1.03E+03	6.58E+03	8.88E+02	1.00E-08	1.19E-11
Palladium (46)	Pd-107	1.07E-07	6.50E+06	3.48E+02		3.48E+02	1.00E-08	6.78E-04
Palladium (46)	Pd-109	4.43E+02	1.56E-03	1.06E+04	4.46E+04	8.57E+03	1.00E-08	4.09E-12
Palladium (46)	Pd-109m	7.77E+04	8.92E-06	1.85E+06	7.78E+06	1.49E+06	1.00E-08	4.07E-12
Palladium (46)	Pd-111	1.56E+04	4.45E-05	1.68E+05	1.11E+06	1.46E+05	1.00E-08	2.02E-12
Palladium (46)	Pd-112	2.89E+02	2.40E-03	1.29E+03	1.40E+03	6.69E+02	1.00E-08	5.04E-13
Palladium (46)	Pd-114	1.51E+05	4.60E-06		4.32E+18	4.32E+18	1.00E-08	6.35E+00
Palladium (46)	Pd-96	1.79E+05	3.87E-06		3.86E+14	3.86E+14	1.00E-08	4.01E-04
Palladium (46)	Pd-97	1.17E+05	5.90E-06	1.05E+07	2.03E+06	1.70E+06	1.00E-08	2.72E-12
Palladium (46)	Pd-98	2.06E+04	3.37E-05	3.00E+14	1.29E+12	1.29E+12	1.00E-08	1.19E-05
Palladium (46)	Pd-99	1.70E+04	4.07E-05	2.73E+06	1.05E+05	1.01E+05	1.00E-08	1.15E-12
Promethium (61)	Pm-136	2.04E+05	3.39E-06	2.04E+07	3.27E+05	3.22E+05	1.00E-08	4.16E-13
Promethium (61)	Pm-137m	1.52E+05	4.57E-06	3.21E+07	1.41E+06	1.35E+06	1.00E-08	2.36E-12
Promethium (61)	Pm-139	8.78E+04	7.90E-06	4.61E+06	1.35E+06	1.04E+06	1.00E-08	3.20E-12
Promethium (61)	Pm-140	2.38E+06	2.92E-07	1.60E+07	1.46E+07	7.62E+06	1.00E-08	8.72E-13
Promethium (61)	Pm-140m	6.12E+04	1.13E-05	4.11E+05	3.76E+05	1.96E+05	1.00E-08	8.71E-13
Promethium (61)	Pm-141	1.74E+04	3.98E-05	2.71E+07	9.41E+05	9.09E+05	1.00E-08	1.43E-11
Promethium (61)	Pm-142	5.40E+05	1.28E-06		4.52E+21	4.52E+21	1.00E-08	2.31E+03
Promethium (61)	Pm-143	9.55E-01	7.26E-01	8.83E+01	1.96E+01	1.60E+01	1.00E-08	4.66E-12
Promethium (61)	Pm-144	6.97E-01	9.95E-01	1.88E+01	3.49E+00	2.95E+00	1.00E-08	1.18E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Promethium (61)	Pm-145	3.92E-02	1.77E+01	1.23E+02	1.45E+02	6.64E+01	1.00E-08	4.77E-10
Promethium (61)	Pm-146	1.25E-01	5.53E+00	1.59E+01	5.56E+00	4.12E+00	1.00E-08	9.31E-12
Promethium (61)	Pm-147	2.64E-01	2.62E+00	5.83E+01	1.52E+05	5.82E+01	1.00E-08	6.29E-11
Promethium (61)	Pm-148	4.71E+01	1.47E-02	2.34E+02	2.89E+02	1.29E+02	1.00E-08	7.88E-13
Promethium (61)	Pm-148m	6.13E+00	1.13E-01	4.38E+01	1.19E+01	9.39E+00	1.00E-08	4.40E-13
Promethium (61)	Pm-149	1.14E+02	6.06E-03	1.54E+03	1.04E+04	1.34E+03	1.00E-08	3.39E-12
Promethium (61)	Pm-150	2.27E+03	3.06E-04	1.16E+05	5.90E+03	5.61E+03	1.00E-08	7.21E-13
Promethium (61)	Pm-151	2.14E+02	3.24E-03	3.89E+03	2.46E+03	1.51E+03	1.00E-08	2.07E-12
Promethium (61)	Pm-152	8.84E+04	7.84E-06		1.28E+17	1.28E+17	1.00E-08	4.26E-01
Promethium (61)	Pm-152m	4.84E+04	1.43E-05		2.07E+15	2.07E+15	1.00E-08	1.26E-02
Promethium (61)	Pm-153	6.94E+04	9.99E-06	1.26E+06	4.15E+06	9.66E+05	1.00E-08	4.14E-12
Promethium (61)	Pm-154	2.11E+05	3.29E-06		9.19E+18	9.19E+18	1.00E-08	1.30E+01
Promethium (61)	Pm-154m	1.36E+05	5.10E-06		4.73E+17	4.73E+17	1.00E-08	1.04E+00
Polonium (84)	Po-203	9.92E+03	6.98E-05	1.67E+05	9.36E+03	8.86E+03	1.00E-08	3.52E-13
Polonium (84)	Po-204	1.72E+03	4.03E-04	2.80E+04	1.62E+03	1.53E+03	1.00E-08	3.53E-13
Polonium (84)	Po-205	3.66E+03	1.89E-04	5.04E+04	4.57E+03	4.19E+03	1.00E-08	4.56E-13
Polonium (84)	Po-206	2.87E+01	2.41E-02	2.07E+01	2.70E+01	1.17E+01	1.00E-08	1.63E-13
Polonium (84)	Po-207	1.05E+03	6.62E-04	1.02E+05	3.19E+03	3.09E+03	1.00E-08	1.19E-12
Polonium (84)	Po-208	2.39E-01	2.90E+00	9.88E-03	2.11E+05	9.88E-03	1.00E-08	1.67E-14
Polonium (84)	Po-209	6.79E-03	1.02E+02	8.88E-03	6.52E+02	8.88E-03	1.00E-08	5.30E-13
Polonium (84)	Po-210	1.83E+00	3.79E-01	2.41E-02	8.85E+05	2.41E-02	1.00E-08	5.36E-15
Polonium (84)	Po-211	4.24E+07	1.64E-08		3.22E+35	3.22E+35	7.94E-06	3.12E+15
Polonium (84)	Po-212	7.31E+13	9.48E-15					
Polonium (84)	Po-212m	4.85E+05	1.43E-06		7.16E+22	7.16E+22	1.00E-08	6.08E+04
Polonium (84)	Po-213	5.20E+12	1.33E-13	1.71E+15	9.45E+15	1.45E+15	1.00E-08	1.15E-10
Polonium (84)	Po-214	1.33E+11	5.21E-12	3.21E+10	4.36E+14	3.21E+10	1.61E+00	1.00E-13
Polonium (84)	Po-215	1.23E+10	5.65E-11	2.24E+15	4.99E+14	4.08E+14	1.00E-08	1.39E-08
Polonium (84)	Po-216	1.51E+08	4.60E-09	3.17E+08	3.78E+08	1.72E+08	1.00E-08	4.79E-13
Polonium (84)	Po-218	1.17E+05	5.90E-06	2.83E+04	3.85E+08	2.83E+04	1.61E+00	1.02E-13
Praseodymium (59)	Pr-134	3.31E+04	2.09E-05	1.66E+05	1.55E+05	8.03E+04	1.00E-08	6.30E-13
Praseodymium (59)	Pr-134m	2.14E+04	3.23E-05	1.08E+05	1.01E+05	5.21E+04	1.00E-08	6.32E-13
Praseodymium (59)	Pr-135	1.52E+04	4.57E-05	6.88E+05	7.06E+04	6.40E+04	1.00E-08	1.11E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Praseodymium (59)	Pr-136	2.78E+04	2.49E-05	4.26E+15	1.96E+13	1.95E+13	1.00E-08	1.85E-04
Praseodymium (59)	Pr-137	4.74E+03	1.46E-04	1.00E+06	4.41E+04	4.22E+04	1.00E-08	2.37E-12
Praseodymium (59)	Pr-138	2.51E+05	2.76E-06		6.89E+20	6.89E+20	1.00E-08	7.35E+02
Praseodymium (59)	Pr-138m	2.86E+03	2.42E-04	2.97E+05	4.57E+03	4.50E+03	1.00E-08	4.21E-13
Praseodymium (59)	Pr-139	1.38E+03	5.03E-04	7.23E+04	2.11E+04	1.63E+04	1.00E-08	3.20E-12
Praseodymium (59)	Pr-140	1.07E+05	6.45E-06		3.42E+17	3.42E+17	1.00E-08	8.66E-01
Praseodymium (59)	Pr-142	3.18E+02	2.18E-03	3.21E+03	8.09E+03	2.30E+03	1.00E-08	2.00E-12
Praseodymium (59)	Pr-142m	2.49E+04	2.78E-05	2.53E+05	6.36E+05	1.81E+05	1.00E-08	2.00E-12
Praseodymium (59)	Pr-143	1.86E+01	3.72E-02	2.13E+02	3.36E+03	2.00E+02	1.00E-08	2.98E-12
Praseodymium (59)	Pr-144	2.11E+04	3.29E-05	4.16E+14	3.66E+13	3.37E+13	1.00E-08	4.46E-04
Praseodymium (59)	Pr-144m	5.06E+04	1.37E-05	5.83E+14	5.13E+13	4.72E+13	1.00E-08	2.61E-04
Praseodymium (59)	Pr-145	1.01E+03	6.83E-04	3.43E+04	3.85E+04	1.82E+04	1.00E-08	5.03E-12
Praseodymium (59)	Pr-146	1.51E+04	4.59E-05	1.13E+12	2.31E+10	2.27E+10	1.00E-08	4.26E-07
Praseodymium (59)	Pr-147	2.72E+04	2.55E-05	3.19E+05	7.27E+05	2.22E+05	1.00E-08	2.33E-12
Praseodymium (59)	Pr-148	1.59E+05	4.36E-06		1.80E+19	1.80E+19	1.00E-08	3.26E+01
Praseodymium (59)	Pr-148m	1.81E+05	3.82E-06		4.37E+18	4.37E+18	1.00E-08	6.93E+00
Platinum (78)	Pt-184	2.11E+04	3.29E-05	1.50E+06	4.29E+04	4.17E+04	1.00E-08	7.07E-13
Platinum (78)	Pt-186	2.92E+03	2.37E-04	1.01E+05	5.03E+03	4.79E+03	1.00E-08	5.92E-13
Platinum (78)	Pt-187	2.58E+03	2.68E-04	1.71E+05	1.10E+04	1.03E+04	1.00E-08	1.45E-12
Platinum (78)	Pt-188	2.48E+01	2.79E-02	2.05E+02	4.55E+01	3.72E+01	1.00E-08	5.48E-13
Platinum (78)	Pt-189	5.58E+02	1.24E-03	1.69E+04	4.05E+03	3.27E+03	1.00E-08	2.15E-12
Platinum (78)	Pt-190	1.07E-12	6.50E+11	1.93E+00		1.93E+00	1.00E-08	6.66E-01
Platinum (78)	Pt-191	9.03E+01	7.68E-03	3.27E+03	1.25E+03	9.06E+02	1.00E-08	3.72E-12
Platinum (78)	Pt-193	1.39E-02	5.00E+01	3.78E+02	3.53E+04	3.74E+02	1.00E-08	1.01E-08
Platinum (78)	Pt-193m	5.84E+01	1.19E-02	1.70E+03	2.42E+04	1.59E+03	1.00E-08	1.02E-11
Platinum (78)	Pt-195m	6.29E+01	1.10E-02	1.30E+03	3.80E+03	9.71E+02	1.00E-08	5.84E-12
Platinum (78)	Pt-197	3.05E+02	2.27E-03	9.44E+03	4.73E+04	7.87E+03	1.00E-08	9.86E-12
Platinum (78)	Pt-197m	3.82E+03	1.82E-04	1.02E+05	1.49E+05	6.04E+04	1.00E-08	6.04E-12
Platinum (78)	Pt-199	1.18E+04	5.86E-05	3.52E+05	5.15E+05	2.09E+05	1.00E-08	6.83E-12
Platinum (78)	Pt-200	4.86E+02	1.43E-03	5.25E+03	4.65E+03	2.47E+03	1.00E-08	1.97E-12
Platinum (78)	Pt-202	1.38E+02	5.02E-03	4.18E+02	1.47E+03	3.26E+02	1.00E-08	9.25E-13
Plutonium (94)	Pu-232	1.08E+04	6.41E-05	4.27E+04	4.25E+06	4.23E+04	6.38E+00	1.76E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Plutonium (94)	Pu-234	6.90E+02	1.00E-03	1.46E+03	2.59E+03	9.33E+02	1.00E-08	6.14E-13
Plutonium (94)	Pu-235	1.44E+04	4.81E-05	7.20E+06	5.28E+07	6.34E+06	1.00E-08	2.01E-10
Plutonium (94)	Pu-236	2.42E-01	2.86E+00	1.66E-01	7.72E+01	1.66E-01	1.00E-08	3.13E-13
Plutonium (94)	Pu-237	5.60E+00	1.24E-01	6.70E+02	4.93E+02	2.84E+02	1.00E-08	2.33E-11
Plutonium (94)	Pu-238	7.90E-03	8.77E+01	5.88E-02	6.28E+03	5.88E-02	1.00E-08	3.44E-12
Plutonium (94)	Pu-239	2.87E-05	2.41E+04	5.32E-02	1.22E+04	5.32E-02	1.00E-08	8.59E-10
Plutonium (94)	Pu-240	1.06E-04	6.56E+03	5.32E-02	6.60E+03	5.32E-02	1.00E-08	2.35E-10
Plutonium (94)	Pu-241	4.83E-02	1.44E+01	2.13E+00	5.82E+03	2.13E+00	4.85E+01	2.07E-11
Plutonium (94)	Pu-242	1.85E-06	3.75E+05	5.59E-02	6.74E+03	5.59E-02	1.00E-08	1.42E-08
Plutonium (94)	Pu-243	1.22E+03	5.66E-04	1.56E+05	2.02E+05	8.82E+04	1.00E-08	3.39E-11
Plutonium (94)	Pu-244	8.66E-09	8.00E+07	2.73E-02	9.35E+00	2.72E-02	8.66E+04	1.49E-06
Plutonium (94)	Pu-245	5.78E+02	1.20E-03	1.01E+04	5.02E+03	3.35E+03	1.00E-08	2.76E-12
Plutonium (94)	Pu-246	2.33E+01	2.97E-02	1.09E+02	8.07E+01	4.63E+01	1.00E-08	9.47E-13
Radium (88)	Ra-219	2.19E+09	3.17E-10		1.63E+37	1.63E+37	6.31E-06	3.17E+15
Radium (88)	Ra-220	1.22E+09	5.68E-10		1.51E+42	1.51E+42	6.31E-06	5.27E+20
Radium (88)	Ra-221	7.81E+05	8.88E-07	1.84E+08	1.02E+09	1.56E+08	1.00E-08	8.54E-11
Radium (88)	Ra-222	5.75E+05	1.20E-06	1.39E+05	1.88E+09	1.39E+05	1.61E+00	1.04E-13
Radium (88)	Ra-223	2.21E+01	3.13E-02	2.87E+00	2.12E+02	2.83E+00	1.00E-08	5.53E-14
Radium (88)	Ra-224	6.91E+01	1.00E-02	1.30E+01	1.90E+02	1.22E+01	1.00E-08	7.67E-14
Radium (88)	Ra-225	1.70E+01	4.08E-02	1.64E+00	2.44E+02	1.63E+00	1.00E-08	4.19E-14
Radium (88)	Ra-226	4.33E-04	1.60E+03	6.49E-03	2.24E+00	6.47E-03	1.35E+02	6.55E-12
Radium (88)	Ra-227	8.63E+03	8.03E-05	8.55E+03	2.06E+06	8.51E+03	2.15E-01	4.35E-13
Radium (88)	Ra-228	1.21E-01	5.75E+00	1.97E-02	2.85E+00	1.96E-02	1.00E-08	7.20E-14
Radium (88)	Ra-230	3.92E+03	1.77E-04	2.88E+05	2.20E+04	2.05E+04	1.00E-08	2.33E-12
Rubidium (37)	Rb-77	9.66E+04	7.17E-06	1.32E+07	2.66E+05	2.61E+05	1.00E-08	4.03E-13
Rubidium (37)	Rb-78	2.06E+04	3.36E-05	2.67E+14	1.44E+12	1.44E+12	1.00E-08	1.05E-05
Rubidium (37)	Rb-78m	6.35E+04	1.09E-05	5.55E+15	2.99E+13	2.97E+13	1.00E-08	7.09E-05
Rubidium (37)	Rb-79	1.59E+04	4.36E-05	4.39E+12	2.52E+05	2.52E+05	1.00E-08	2.42E-12
Rubidium (37)	Rb-80	6.54E+05	1.06E-06		1.77E+22	1.77E+22	1.00E-08	4.21E+03
Rubidium (37)	Rb-81	1.33E+03	5.22E-04	3.63E+05	8.25E+03	8.06E+03	1.00E-08	9.55E-13
Rubidium (37)	Rb-81m	1.19E+04	5.80E-05	3.34E+06	7.61E+04	7.44E+04	1.00E-08	9.79E-13
Rubidium (37)	Rb-82	2.86E+05	2.42E-06		6.30E+19	6.30E+19	1.00E-08	3.50E+01

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Rubidium (37)	Rb-82m	9.38E+02	7.39E-04	9.36E+04	1.28E+03	1.27E+03	1.00E-08	2.15E-13
Rubidium (37)	Rb-83	2.93E+00	2.36E-01	2.34E+01	2.50E+01	1.21E+01	1.00E-08	6.64E-13
Rubidium (37)	Rb-84	7.72E+00	8.98E-02	3.67E+01	3.33E+01	1.75E+01	1.00E-08	3.69E-13
Rubidium (37)	Rb-84m	1.80E+04	3.85E-05	8.55E+04	7.74E+04	4.06E+04	1.00E-08	3.68E-13
Rubidium (37)	Rb-86	1.36E+01	5.11E-02	6.43E+01	3.08E+02	5.32E+01	1.00E-08	6.54E-13
Rubidium (37)	Rb-86m	3.58E+05	1.93E-06	1.70E+06	8.14E+06	1.40E+06	1.00E-08	6.55E-13
Rubidium (37)	Rb-87	1.41E-11	4.92E+10	8.73E+00	5.28E+04	8.73E+00	1.00E-08	1.05E-01
Rubidium (37)	Rb-88	2.05E+04	3.38E-05	2.01E+14	6.82E+12	6.60E+12	1.00E-08	5.50E-05
Rubidium (37)	Rb-89	2.40E+04	2.88E-05	1.26E+05	1.32E+06	1.15E+05	1.00E-08	8.25E-13
Rubidium (37)	Rb-90	1.38E+05	5.01E-06	2.57E+06	1.96E+08	2.53E+06	1.52E-02	3.20E-12
Rubidium (37)	Rb-90m	8.47E+04	8.18E-06	1.57E+06	1.20E+08	1.55E+06	1.52E-02	3.20E-12
Rhenium (75)	Re-178	2.76E+04	2.51E-05	1.48E+06	8.49E+05	5.39E+05	1.00E-08	6.75E-12
Rhenium (75)	Re-179	1.87E+04	3.71E-05	1.11E+07	1.34E+06	1.20E+06	1.00E-08	2.23E-11
Rhenium (75)	Re-180	1.49E+05	4.64E-06		1.68E+18	1.68E+18	1.00E-08	3.94E+00
Rhenium (75)	Re-181	3.05E+02	2.27E-03	8.14E+03	1.47E+03	1.24E+03	1.00E-08	1.43E-12
Rhenium (75)	Re-182	9.49E+01	7.31E-03	8.87E+02	2.15E+02	1.73E+02	1.00E-08	6.45E-13
Rhenium (75)	Re-182m	4.78E+02	1.45E-03	2.21E+04	1.60E+03	1.49E+03	1.00E-08	1.10E-12
Rhenium (75)	Re-183	3.61E+00	1.92E-01	5.15E+01	1.02E+02	3.42E+01	1.00E-08	3.36E-12
Rhenium (75)	Re-184	6.66E+00	1.04E-01	8.82E+01	2.99E+01	2.23E+01	1.00E-08	1.20E-12
Rhenium (75)	Re-184m	1.50E+00	4.63E-01	1.18E+01	7.78E+00	4.69E+00	1.00E-08	1.12E-12
Rhenium (75)	Re-186	6.80E+01	1.02E-02	6.36E+02	5.87E+03	5.74E+02	1.00E-08	3.04E-12
Rhenium (75)	Re-186m	3.47E-06	2.00E+05	3.65E+00	6.63E+01	3.46E+00	1.69E-01	3.60E-07
Rhenium (75)	Re-187	1.68E-11	4.12E+10	2.79E+03		2.79E+03	1.00E-08	6.02E+01
Rhenium (75)	Re-188	3.57E+02	1.94E-03	3.51E+03	9.04E+03	2.53E+03	1.00E-08	2.58E-12
Rhenium (75)	Re-188m	1.96E+04	3.54E-05	1.93E+05	4.96E+05	1.39E+05	1.00E-08	2.58E-12
Rhenium (75)	Re-189	2.50E+02	2.77E-03	4.48E+03	1.31E+04	3.34E+03	1.00E-08	4.90E-12
Rhenium (75)	Re-190	1.17E+05	5.90E-06		2.88E+17	2.88E+17	1.00E-08	9.03E-01
Rhenium (75)	Re-190m	1.90E+03	3.65E-04	6.95E+04	4.66E+03	4.37E+03	1.00E-08	8.50E-13
Rhodium (45)	Rh-100	2.92E+02	2.37E-03	5.75E+03	4.45E+02	4.13E+02	1.00E-08	2.74E-13
Rhodium (45)	Rh-100m	7.92E+04	8.75E-06	1.58E+06	1.22E+05	1.14E+05	1.00E-08	2.78E-13
Rhodium (45)	Rh-101	2.10E-01	3.30E+00	2.69E+01	1.62E+01	1.01E+01	1.00E-08	9.43E-12
Rhodium (45)	Rh-101m	5.83E+01	1.19E-02	3.60E+03	8.15E+02	6.64E+02	1.00E-08	2.23E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Rhodium (45)	Rh-102	1.22E+00	5.67E-01	1.95E+01	1.31E+01	7.84E+00	1.00E-08	1.27E-12
Rhodium (45)	Rh-102m	1.85E-01	3.74E+00	5.30E+00	2.02E+00	1.46E+00	1.00E-08	1.56E-12
Rhodium (45)	Rh-103m	6.49E+03	1.07E-04	2.30E+07	2.95E+07	1.29E+07	1.00E-08	3.98E-10
Rhodium (45)	Rh-104	5.17E+05	1.34E-06		4.95E+22	4.95E+22	1.00E-08	1.93E+04
Rhodium (45)	Rh-104m	8.39E+04	8.26E-06		2.78E+17	2.78E+17	1.00E-08	6.68E-01
Rhodium (45)	Rh-105	1.72E+02	4.04E-03	6.25E+03	8.72E+03	3.64E+03	1.00E-08	4.32E-12
Rhodium (45)	Rh-106	7.33E+05	9.45E-07		8.36E+22	8.36E+22	1.00E-08	2.34E+04
Rhodium (45)	Rh-106m	2.78E+03	2.49E-04	2.21E+05	3.87E+03	3.81E+03	1.00E-08	2.82E-13
Rhodium (45)	Rh-107	1.68E+04	4.13E-05	1.72E+13	4.99E+11	4.85E+11	1.00E-08	5.99E-06
Rhodium (45)	Rh-108	1.30E+06	5.33E-07		3.76E+24	3.76E+24	1.00E-08	6.06E+05
Rhodium (45)	Rh-109	2.73E+05	2.54E-06	6.53E+06	2.75E+07	5.28E+06	1.00E-08	4.09E-12
Rhodium (45)	Rh-94	3.10E+05	2.24E-06	2.11E+07	4.85E+05	4.74E+05	1.00E-08	2.79E-13
Rhodium (45)	Rh-95	7.26E+04	9.55E-06	3.81E+06	1.43E+05	1.38E+05	1.00E-08	3.49E-13
Rhodium (45)	Rh-95m	1.86E+05	3.73E-06	9.76E+06	3.65E+05	3.52E+05	1.00E-08	3.49E-13
Rhodium (45)	Rh-96	3.68E+04	1.88E-05		7.07E+13	7.07E+13	1.00E-08	3.58E-04
Rhodium (45)	Rh-96m	2.41E+05	2.87E-06		6.55E+14	6.55E+14	1.00E-08	5.06E-04
Rhodium (45)	Rh-97	1.19E+04	5.84E-05	1.06E+06	2.05E+05	1.72E+05	1.00E-08	2.72E-12
Rhodium (45)	Rh-97m	7.88E+03	8.79E-05	5.27E+05	1.30E+04	1.27E+04	1.00E-08	3.04E-13
Rhodium (45)	Rh-98	4.19E+04	1.66E-05		4.06E+14	4.06E+14	1.00E-08	1.84E-03
Rhodium (45)	Rh-99	1.57E+01	4.41E-02	3.71E+02	1.13E+02	8.64E+01	1.00E-08	1.06E-12
Rhodium (45)	Rh-99m	1.29E+03	5.37E-04	2.59E+05	7.96E+03	7.72E+03	1.00E-08	1.15E-12
Radon (86)	Rn-207	3.94E+04	1.76E-05	1.08E+06	4.87E+04	4.66E+04	1.00E-08	4.75E-13
Radon (86)	Rn-209	1.28E+04	5.42E-05	1.98E+04	2.04E+04	1.00E+04	1.00E-08	3.19E-13
Radon (86)	Rn-210	2.53E+03	2.74E-04	5.79E+02	2.37E+03	4.65E+02	1.00E-08	7.50E-14
Radon (86)	Rn-211	4.16E+02	1.67E-03	6.98E+02	7.38E+02	3.59E+02	1.00E-08	3.53E-13
Radon (86)	Rn-212	1.52E+04	4.55E-05	6.30E+02	1.34E+10	6.30E+02	1.00E-08	1.70E-14
Radon (86)	Rn-215	9.50E+12	7.29E-14					
Radon (86)	Rn-216	4.86E+11	1.43E-12					
Radon (86)	Rn-217	4.05E+10	1.71E-11					
Radon (86)	Rn-218	6.24E+08	1.11E-09	1.51E+08	2.05E+12	1.51E+08	1.61E+00	1.02E-13
Radon (86)	Rn-219	5.52E+06	1.26E-07	1.01E+12	2.24E+11	1.83E+11	1.00E-08	1.41E-08
Radon (86)	Rn-220	3.93E+05	1.76E-06	8.38E+05	1.09E+06	4.74E+05	1.00E-08	5.15E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Radon (86)	Rn-222	6.62E+01	1.05E-02	1.60E+01	1.49E+02	1.60E+01	1.63E+00	1.04E-13
Radon (86)	Rn-223	1.50E+04	4.62E-05	1.94E+03	1.43E+05	1.91E+03	1.00E-08	5.52E-14
Ruthenium (44)	Ru-103	6.44E+00	1.08E-01	1.20E+02	5.09E+01	3.58E+01	1.00E-08	1.11E-12
Ruthenium (44)	Ru-105	1.37E+03	5.07E-04	2.83E+04	6.24E+03	5.11E+03	1.00E-08	7.61E-13
Ruthenium (44)	Ru-106	6.77E-01	1.02E+00	2.62E+00	1.49E+01	2.23E+00	1.00E-08	6.77E-13
Ruthenium (44)	Ru-107	9.71E+04	7.13E-06	8.72E+13	2.39E+12	2.32E+12	1.00E-08	4.96E-06
Ruthenium (44)	Ru-108	8.01E+04	8.66E-06		2.87E+17	2.87E+17	1.00E-08	7.52E-01
Ruthenium (44)	Ru-92	9.98E+04	6.94E-06		2.10E+15	2.10E+15	1.00E-08	3.76E-03
Ruthenium (44)	Ru-94	7.03E+03	9.86E-05	4.79E+05	1.10E+04	1.08E+04	1.00E-08	2.79E-13
Ruthenium (44)	Ru-95	3.69E+03	1.88E-04	1.94E+05	7.27E+03	7.00E+03	1.00E-08	3.49E-13
Ruthenium (44)	Ru-97	8.72E+01	7.95E-03	7.76E+03	1.51E+03	1.26E+03	1.00E-08	2.72E-12
Sulfur (16)	S-35	2.89E+00	2.40E-01	3.12E+02	9.58E+05	3.12E+02	1.00E-08	7.33E-12
Sulphur (16)	S-37	7.21E+04	9.61E-06		6.19E+15	6.19E+15	1.00E-08	6.16E-03
Sulfur (16)	S-38	2.14E+03	3.24E-04	6.26E+04	2.75E+03	2.63E+03	1.00E-08	9.07E-14
Antimony (51)	Sb-111	2.91E+05	2.38E-06	1.33E+07	2.96E+06	2.42E+06	1.00E-08	1.79E-12
Antimony (51)	Sb-113	5.46E+04	1.27E-05	1.08E+06	8.92E+05	4.88E+05	1.00E-08	1.96E-12
Antimony (51)	Sb-114	1.04E+05	6.64E-06		9.29E+16	9.29E+16	1.00E-08	1.97E-01
Antimony (51)	Sb-115	1.13E+04	6.11E-05	6.27E+06	4.88E+04	4.84E+04	1.00E-08	9.52E-13
Antimony (51)	Sb-116	2.31E+04	3.01E-05	1.46E+15	5.77E+12	5.75E+12	1.00E-08	5.61E-05
Antimony (51)	Sb-116m	6.04E+03	1.15E-04	1.24E+06	7.83E+03	7.78E+03	1.00E-08	2.90E-13
Antimony (51)	Sb-117	2.17E+03	3.20E-04	1.58E+06	4.89E+04	4.75E+04	1.00E-08	4.97E-12
Antimony (51)	Sb-118	1.01E+05	6.85E-06		6.50E+17	6.50E+17	1.00E-08	1.47E+00
Antimony (51)	Sb-118m	1.21E+03	5.71E-04	7.58E+04	1.89E+03	1.84E+03	1.00E-08	3.47E-13
Antimony (51)	Sb-119	1.59E+02	4.36E-03	2.60E+04	3.82E+04	1.55E+04	1.00E-08	2.25E-11
Antimony (51)	Sb-120	2.29E+04	3.02E-05	2.83E+15	2.46E+13	2.44E+13	1.00E-08	2.48E-04
Antimony (51)	Sb-120m	4.39E+01	1.58E-02	4.70E+02	7.22E+01	6.26E+01	1.00E-08	3.32E-13
Antimony (51)	Sb-122	9.29E+01	7.46E-03	7.30E+02	7.13E+02	3.61E+02	1.00E-08	9.20E-13
Antimony (51)	Sb-122m	8.69E+04	7.97E-06	6.83E+05	6.67E+05	3.37E+05	1.00E-08	9.19E-13
Antimony (51)	Sb-124	4.20E+00	1.65E-01	2.24E+01	9.24E+00	6.54E+00	1.00E-08	3.74E-13
Antimony (51)	Sb-124m	2.35E+05	2.95E-06	1.67E+06	6.89E+05	4.87E+05	1.00E-08	4.99E-13
Antimony (51)	Sb-124n	1.80E+04	3.84E-05	1.28E+05	5.29E+04	3.74E+04	1.00E-08	4.99E-13
Antimony (51)	Sb-125	2.51E-01	2.76E+00	1.15E+01	1.01E+01	5.39E+00	1.00E-08	5.20E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Antimony (51)	Sb-126	2.05E+01	3.38E-02	1.02E+02	2.90E+01	2.26E+01	1.00E-08	2.69E-13
Antimony (51)	Sb-126m	1.90E+04	3.64E-05	6.77E+05	1.92E+05	1.50E+05	1.00E-08	1.92E-12
Antimony (51)	Sb-127	6.57E+01	1.05E-02	3.96E+02	3.56E+02	1.87E+02	1.00E-08	7.03E-13
Antimony (51)	Sb-128	6.74E+02	1.03E-03	1.11E+04	8.47E+02	7.87E+02	1.00E-08	2.90E-13
Antimony (51)	Sb-128m	3.50E+04	1.98E-05	1.57E+07	1.20E+06	1.11E+06	1.00E-08	7.90E-12
Antimony (51)	Sb-129	1.38E+03	5.02E-04	1.59E+04	3.43E+03	2.82E+03	1.00E-08	5.11E-13
Antimony (51)	Sb-130	9.22E+03	7.52E-05	1.31E+06	1.10E+04	1.09E+04	1.00E-08	2.98E-13
Antimony (51)	Sb-130m	5.78E+04	1.20E-05		1.54E+15	1.54E+15	1.00E-08	6.73E-03
Antimony (51)	Sb-131	1.58E+04	4.38E-05	9.63E+03	6.45E+04	8.38E+03	1.00E-08	1.35E-13
Antimony (51)	Sb-133	1.46E+05	4.76E-06	4.46E+05	5.63E+05	2.49E+05	1.00E-08	4.41E-13
Scandium (21)	Sc-42m	3.52E+05	1.97E-06		6.65E+19	6.65E+19	1.00E-08	1.54E+01
Scandium (21)	Sc-43	1.56E+03	4.44E-04	9.57E+04	5.95E+03	5.61E+03	1.00E-08	3.00E-13
Scandium (21)	Sc-44	1.53E+03	4.53E-04	5.71E+04	2.76E+03	2.63E+03	1.00E-08	1.47E-13
Scandium (21)	Sc-44m	1.04E+02	6.69E-03	4.94E+02	1.68E+02	1.25E+02	1.00E-08	1.03E-13
Scandium (21)	Sc-46	3.02E+00	2.30E-01	2.89E+01	6.33E+00	5.19E+00	1.00E-08	1.53E-13
Scandium (21)	Sc-47	7.55E+01	9.18E-03	1.85E+03	2.83E+03	1.12E+03	1.00E-08	1.35E-12
Scandium (21)	Sc-48	1.39E+02	4.99E-03	1.11E+03	1.68E+02	1.46E+02	1.00E-08	9.75E-14
Scandium (21)	Sc-49	6.37E+03	1.09E-04	1.05E+06	2.36E+05	1.93E+05	1.00E-08	2.88E-12
Scandium (21)	Sc-50	2.13E+05	3.25E-06		4.71E+18	4.71E+18	1.00E-08	2.14E+00
Selenium (34)	Se-70	8.86E+03	7.82E-05	5.06E+05	7.01E+03	6.92E+03	1.00E-08	1.06E-13
Selenium (34)	Se-71	7.68E+04	9.02E-06	2.19E+06	5.29E+05	4.26E+05	1.00E-08	7.64E-13
Selenium (34)	Se-72	3.01E+01	2.30E-02	5.74E+01	6.19E+01	2.98E+01	1.00E-08	1.38E-13
Selenium (34)	Se-73	8.49E+02	8.16E-04	2.49E+04	2.93E+03	2.62E+03	1.00E-08	4.38E-13
Selenium (34)	Se-73m	9.15E+03	7.57E-05	2.87E+05	3.25E+04	2.92E+04	1.00E-08	4.52E-13
Selenium (34)	Se-75	2.11E+00	3.28E-01	1.24E+01	2.53E+01	8.34E+00	1.00E-08	5.75E-13
Selenium (34)	Se-77m	1.26E+06	5.50E-07		1.71E+26	1.71E+26	1.00E-08	2.03E+07
Selenium (34)	Se-79	2.35E-06	2.95E+05	4.88E+00	2.87E+05	4.88E+00	1.00E-08	3.18E-07
Selenium (34)	Se-79m	9.29E+04	7.46E-06	1.93E+11	1.13E+16	1.93E+11	1.00E-08	3.18E-07
Selenium (34)	Se-81	1.97E+04	3.51E-05	5.08E+14	4.76E+13	4.35E+13	1.00E-08	3.46E-04
Selenium (34)	Se-81m	6.36E+03	1.09E-04	1.07E+06	2.57E+05	2.07E+05	1.00E-08	5.11E-12
Selenium (34)	Se-83	1.63E+04	4.24E-05	4.93E+06	2.10E+06	1.47E+06	1.00E-08	1.45E-11
Selenium (34)	Se-83m	3.12E+05	2.22E-06	9.33E+07	3.98E+07	2.79E+07	1.00E-08	1.44E-11

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Selenium (34)	Se-84	1.17E+05	5.90E-06	1.63E+11	2.44E+09	2.41E+09	1.00E-08	3.34E-09
Silicon (14)	Si-31	2.32E+03	2.99E-04	1.93E+05	1.22E+05	7.47E+04	1.00E-08	1.94E-12
Silicon (14)	Si-32	5.25E-03	1.32E+02	4.50E+00	4.91E+01	4.13E+00	2.85E-01	4.88E-11
Samarium (62)	Sm-139	1.42E+05	4.89E-06	7.44E+06	2.17E+06	1.68E+06	1.00E-08	3.20E-12
Samarium (62)	Sm-140	2.46E+04	2.82E-05	1.65E+05	1.51E+05	7.89E+04	1.00E-08	8.72E-13
Samarium (62)	Sm-141	3.57E+04	1.94E-05	5.54E+07	1.93E+06	1.86E+06	1.00E-08	1.43E-11
Samarium (62)	Sm-141m	1.61E+04	4.30E-05	2.50E+07	8.70E+05	8.41E+05	1.00E-08	1.43E-11
Samarium (62)	Sm-142	5.02E+03	1.38E-04	3.71E+05	1.79E+04	1.71E+04	1.00E-08	9.36E-13
Samarium (62)	Sm-143	4.16E+04	1.66E-05	3.85E+06	8.54E+05	6.99E+05	1.00E-08	4.66E-12
Samarium (62)	Sm-143m	3.31E+05	2.09E-06	3.06E+07	6.79E+06	5.56E+06	1.00E-08	4.66E-12
Samarium (62)	Sm-145	7.44E-01	9.32E-01	8.84E+01	9.63E+01	4.61E+01	1.00E-08	1.74E-11
Samarium (62)	Sm-146	6.73E-09	1.03E+08	2.47E-01		2.47E-01	1.00E-08	1.04E-05
Samarium (62)	Sm-147	6.54E-12	1.06E+11	2.70E-01		2.70E-01	1.00E-08	1.18E-02
Samarium (62)	Sm-148	9.90E-17	7.00E+15	2.59E-01		2.59E-01	2.05E+15	7.50E+02
Samarium (62)	Sm-151	7.70E-03	9.00E+01	1.36E+02	9.87E+05	1.36E+02	1.00E-08	5.16E-09
Samarium (62)	Sm-153	1.31E+02	5.31E-03	2.37E+03	7.83E+03	1.82E+03	1.00E-08	4.14E-12
Samarium (62)	Sm-155	1.63E+04	4.24E-05	4.85E+06	8.38E+06	3.07E+06	1.00E-08	5.66E-11
Samarium (62)	Sm-156	6.46E+02	1.07E-03	3.39E+03	1.91E+03	1.22E+03	1.00E-08	5.73E-13
Samarium (62)	Sm-157	4.54E+04	1.53E-05	9.79E+05	5.53E+05	3.53E+05	1.00E-08	2.37E-12
Tin (50)	Sn-106	1.90E+05	3.65E-06		7.68E+15	7.68E+15	1.00E-08	8.33E-03
Tin (50)	Sn-108	3.54E+04	1.96E-05	5.83E+06	5.26E+04	5.21E+04	1.00E-08	3.09E-13
Tin (50)	Sn-109	2.02E+04	3.42E-05	3.00E+05	1.26E+05	8.88E+04	1.00E-08	9.28E-13
Tin (50)	Sn-110	1.48E+03	4.69E-04	4.20E+04	3.04E+03	2.84E+03	1.00E-08	4.10E-13
Tin (50)	Sn-111	1.03E+04	6.72E-05	4.40E+05	4.57E+04	4.14E+04	1.00E-08	8.64E-13
Tin (50)	Sn-113	2.20E+00	3.15E-01	4.25E+01	3.52E+01	1.93E+01	1.00E-08	1.92E-12
Tin (50)	Sn-113m	1.70E+04	4.07E-05	3.61E+05	2.99E+05	1.64E+05	1.00E-08	2.11E-12
Tin (50)	Sn-117m	1.84E+01	3.77E-02	3.45E+02	4.92E+02	2.03E+02	1.00E-08	2.50E-12
Tin (50)	Sn-119m	8.63E-01	8.03E-01	5.65E+01	5.70E+02	5.14E+01	1.00E-08	1.38E-11
Tin (50)	Sn-121	2.25E+02	3.09E-03	1.31E+04	1.03E+07	1.30E+04	1.00E-08	1.36E-11
Tin (50)	Sn-121m	1.58E-02	4.39E+01	2.39E+01	1.02E+03	2.33E+01	1.33E-02	3.47E-10
Tin (50)	Sn-123	1.96E+00	3.54E-01	1.44E+01	1.30E+02	1.30E+01	1.00E-08	1.58E-12
Tin (50)	Sn-123m	9.09E+03	7.62E-05	3.16E+06	1.95E+05	1.83E+05	1.00E-08	4.81E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Tin (50)	Sn-125	2.62E+01	2.64E-02	1.05E+02	2.00E+02	6.90E+01	1.00E-08	6.38E-13
Tin (50)	Sn-125m	3.83E+04	1.81E-05	1.76E+06	1.54E+06	8.21E+05	1.00E-08	5.20E-12
Tin (50)	Sn-126	3.01E-06	2.30E+05	2.56E+00	1.90E+00	1.09E+00	5.21E-01	8.86E-08
Tin (50)	Sn-127	2.89E+03	2.40E-04	1.60E+04	4.35E+03	3.42E+03	1.00E-08	2.91E-13
Tin (50)	Sn-127m	8.82E+04	7.86E-06	5.31E+05	4.78E+05	2.51E+05	1.00E-08	7.02E-13
Tin (50)	Sn-128	6.17E+03	1.12E-04	3.80E+05	8.91E+03	8.70E+03	1.00E-08	3.51E-13
Tin (50)	Sn-129	1.63E+05	4.24E-06	1.88E+06	4.03E+05	3.32E+05	1.00E-08	5.08E-13
Tin (50)	Sn-130	9.79E+04	7.08E-06		1.08E+15	1.08E+15	1.00E-08	2.78E-03
Tin (50)	Sn-130m	2.14E+05	3.23E-06	3.35E+10	2.80E+08	2.78E+08	1.00E-08	3.27E-10
Strontium (38)	Sr-79	1.62E+05	4.28E-06	4.03E+13	2.56E+06	2.56E+06	1.00E-08	2.42E-12
Strontium (38)	Sr-80	3.43E+03	2.02E-04	1.21E+05	7.37E+03	6.95E+03	1.00E-08	3.15E-13
Strontium (38)	Sr-81	1.63E+04	4.24E-05	4.46E+06	1.02E+05	9.93E+04	1.00E-08	9.55E-13
Strontium (38)	Sr-82	9.97E+00	6.95E-02	2.15E+01	3.09E+01	1.27E+01	1.00E-08	2.02E-13
Strontium (38)	Sr-83	1.87E+02	3.70E-03	1.14E+03	5.76E+02	3.83E+02	1.00E-08	3.29E-13
Strontium (38)	Sr-85	3.90E+00	1.78E-01	9.67E+01	3.16E+01	2.38E+01	1.00E-08	1.01E-12
Strontium (38)	Sr-85m	5.39E+03	1.29E-04	1.52E+05	3.36E+04	2.75E+04	1.00E-08	8.43E-13
Strontium (38)	Sr-87m	2.16E+03	3.21E-04	9.48E+05	2.67E+04	2.59E+04	1.00E-08	2.03E-12
Strontium (38)	Sr-89	5.01E+00	1.38E-01	2.62E+01	2.74E+02	2.39E+01	1.00E-08	8.25E-13
Strontium (38)	Sr-90	2.41E-02	2.88E+01	4.47E-01	3.40E+01	4.41E-01	1.52E-02	3.20E-12
Strontium (38)	Sr-91	6.30E+02	1.10E-03	2.81E+03	2.14E+03	1.21E+03	1.00E-08	3.40E-13
Strontium (38)	Sr-92	2.28E+03	3.04E-04	3.33E+04	5.34E+03	4.60E+03	1.00E-08	3.60E-13
Strontium (38)	Sr-93	4.91E+04	1.41E-05	5.65E+05	8.47E+05	3.39E+05	1.00E-08	1.25E-12
Strontium (38)	Sr-94	2.90E+05	2.39E-06	1.90E+15	5.06E+13	4.93E+13	1.00E-08	3.10E-05
Tantalum (73)	Ta-170	5.39E+04	1.29E-05	5.20E+05	7.56E+04	6.60E+04	1.00E-08	4.04E-13
Tantalum (73)	Ta-172	9.90E+03	7.00E-05	1.81E+05	6.35E+04	4.70E+04	2.72E-02	1.58E-12
Tantalum (73)	Ta-173	1.93E+03	3.58E-04	5.40E+04	7.47E+03	6.56E+03	1.00E-08	1.14E-12
Tantalum (73)	Ta-174	5.33E+03	1.30E-04	9.89E+05	2.13E+04	2.08E+04	1.00E-08	1.32E-12
Tantalum (73)	Ta-175	5.78E+02	1.20E-03	1.22E+04	1.63E+03	1.44E+03	1.00E-08	8.44E-13
Tantalum (73)	Ta-176	7.50E+02	9.24E-04	3.16E+04	1.41E+03	1.35E+03	1.00E-08	6.13E-13
Tantalum (73)	Ta-177	1.07E+02	6.46E-03	1.30E+04	6.83E+03	4.48E+03	1.00E-08	1.43E-11
Tantalum (73)	Ta-178	3.91E+04	1.77E-05		1.66E+16	1.66E+16	1.00E-08	1.46E-01
Tantalum (73)	Ta-178m	2.57E+03	2.69E-04	4.04E+05	8.93E+03	8.73E+03	1.00E-08	1.17E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion BDCC	External Exposure BDCC	Total BDCC	Peak Dose Start Time	Total BDCC
				DL=1 (pCi/cm ²)	DL=1 (pCi/cm ²)	DL=1 (pCi/cm ²)	Total (yrs)	DL=1 (mg/cm ²)
Tantalum (73)	Ta-179	3.81E-01	1.82E+00	2.68E+02	2.13E+02	1.18E+02	1.00E-08	1.08E-10
Tantalum (73)	Ta-180	7.45E+02	9.31E-04	1.78E+05	6.68E+04	4.86E+04	1.00E-08	2.28E-11
Tantalum (73)	Ta-182	2.21E+00	3.14E-01	2.18E+01	7.82E+00	5.76E+00	1.00E-08	9.20E-13
Tantalum (73)	Ta-182m	2.30E+04	3.01E-05	2.27E+05	8.13E+04	5.99E+04	1.00E-08	9.19E-13
Tantalum (73)	Ta-183	4.96E+01	1.40E-02	4.91E+02	6.88E+02	2.87E+02	1.00E-08	2.05E-12
Tantalum (73)	Ta-184	6.98E+02	9.93E-04	1.39E+04	1.73E+03	1.54E+03	1.00E-08	7.88E-13
Tantalum (73)	Ta-185	7.37E+03	9.40E-05	1.98E+05	1.28E+05	7.79E+04	1.00E-08	3.79E-12
Tantalum (73)	Ta-186	3.47E+04	2.00E-05	1.66E+16	1.13E+14	1.12E+14	1.00E-08	1.16E-03
Terbium (65)	Tb-146	9.50E+05	7.29E-07	5.90E+06	1.45E+06	1.17E+06	1.00E-08	3.48E-13
Terbium (65)	Tb-147	3.70E+03	1.87E-04	4.08E+04	3.65E+03	3.35E+03	1.00E-08	2.58E-13
Terbium (65)	Tb-147m	1.95E+05	3.56E-06	2.40E+06	4.17E+05	3.55E+05	1.00E-08	5.21E-13
Terbium (65)	Tb-148	6.07E+03	1.14E-04	1.29E+05	1.01E+04	9.34E+03	1.00E-08	4.42E-13
Terbium (65)	Tb-148m	1.66E+05	4.19E-06	4.37E+06	1.38E+18	4.37E+06	1.00E-08	7.59E-12
Terbium (65)	Tb-149	1.47E+03	4.70E-04	2.20E+04	2.88E+03	2.55E+03	1.00E-08	4.99E-13
Terbium (65)	Tb-149m	8.76E+04	7.91E-06	1.68E+06	5.98E+05	4.41E+05	1.00E-08	1.46E-12
Terbium (65)	Tb-150	1.74E+03	3.97E-04	1.07E+05	2.96E+03	2.88E+03	1.00E-08	4.80E-13
Terbium (65)	Tb-150m	6.28E+04	1.10E-05	4.14E+10	2.23E+17	4.14E+10	1.00E-08	1.92E-07
Terbium (65)	Tb-151	3.45E+02	2.01E-03	8.24E+03	1.31E+03	1.13E+03	1.00E-08	9.62E-13
Terbium (65)	Tb-151m	8.74E+05	7.93E-07	2.18E+07	3.55E+06	3.05E+06	1.00E-08	1.02E-12
Terbium (65)	Tb-152	3.47E+02	2.00E-03	6.63E+03	9.35E+02	8.20E+02	1.00E-08	6.97E-13
Terbium (65)	Tb-152m	8.67E+04	7.99E-06	2.10E+06	2.96E+05	2.59E+05	1.00E-08	8.81E-13
Terbium (65)	Tb-153	1.08E+02	6.41E-03	3.08E+03	1.11E+03	8.16E+02	1.00E-08	2.24E-12
Terbium (65)	Tb-154	2.82E+02	2.45E-03	6.01E+03	5.24E+02	4.82E+02	1.00E-08	5.10E-13
Terbium (65)	Tb-155	4.75E+01	1.46E-02	2.39E+03	1.12E+03	7.63E+02	1.00E-08	4.83E-12
Terbium (65)	Tb-156	4.73E+01	1.47E-02	5.40E+02	9.90E+01	8.37E+01	1.00E-08	5.36E-13
Terbium (65)	Tb-156m	2.49E+02	2.79E-03	2.49E+03	5.12E+02	4.24E+02	1.00E-08	5.16E-13
Terbium (65)	Tb-156n	1.15E+03	6.05E-04	1.22E+04	2.39E+03	2.00E+03	1.00E-08	5.29E-13
Terbium (65)	Tb-157	9.76E-03	7.10E+01	3.44E+02	9.32E+02	2.51E+02	1.00E-08	7.85E-09
Terbium (65)	Tb-158	3.85E-03	1.80E+02	1.20E+01	4.99E+00	3.52E+00	1.00E-08	2.80E-10
Terbium (65)	Tb-160	3.50E+00	1.98E-01	2.98E+01	1.28E+01	8.93E+00	1.00E-08	7.92E-13
Terbium (65)	Tb-161	3.66E+01	1.89E-02	6.57E+02	4.53E+03	5.74E+02	1.00E-08	4.89E-12
Terbium (65)	Tb-162	4.79E+04	1.45E-05		2.02E+15	2.02E+15	1.00E-08	1.33E-02

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Terbium (65)	Tb-163	1.87E+04	3.71E-05	2.62E+14	2.03E+12	2.02E+12	1.00E-08	3.42E-05
Terbium (65)	Tb-164	1.21E+05	5.71E-06		3.65E+17	3.65E+17	1.00E-08	9.57E-01
Terbium (65)	Tb-165	1.73E+05	4.01E-06	2.16E+07	9.51E+06	6.60E+06	1.00E-08	1.22E-11
Technetium (43)	Tc-101	2.57E+04	2.70E-05	1.48E+16	2.12E+14	2.09E+14	1.00E-08	1.59E-03
Technetium (43)	Tc-102	4.14E+06	1.67E-07		7.78E+27	7.78E+27	1.00E-08	3.72E+08
Technetium (43)	Tc-102m	8.37E+04	8.28E-06		2.25E+16	2.25E+16	1.00E-08	5.32E-02
Technetium (43)	Tc-104	1.99E+04	3.48E-05	1.81E+14	1.91E+12	1.89E+12	1.00E-08	1.92E-05
Technetium (43)	Tc-105	4.79E+04	1.45E-05	9.92E+05	2.19E+05	1.79E+05	1.00E-08	7.61E-13
Technetium (43)	Tc-91	1.16E+05	5.97E-06	9.75E+08	4.19E+09	7.91E+08	1.00E-08	1.20E-09
Technetium (43)	Tc-91m	1.10E+05	6.28E-06	7.46E+06	3.27E+07	6.07E+06	1.00E-08	9.71E-12
Technetium (43)	Tc-92	8.57E+04	8.09E-06		1.29E+16	1.29E+16	1.00E-08	2.70E-02
Technetium (43)	Tc-93	2.21E+03	3.14E-04	4.14E+05	5.83E+03	5.75E+03	1.00E-08	4.70E-13
Technetium (43)	Tc-93m	8.37E+03	8.28E-05	1.29E+06	1.64E+04	1.61E+04	1.00E-08	3.48E-13
Technetium (43)	Tc-94	1.24E+03	5.57E-04	8.10E+04	1.86E+03	1.81E+03	1.00E-08	2.66E-13
Technetium (43)	Tc-94m	7.00E+03	9.89E-05	9.27E+05	1.37E+04	1.35E+04	1.00E-08	3.53E-13
Technetium (43)	Tc-95	3.04E+02	2.28E-03	2.22E+04	1.52E+03	1.42E+03	1.00E-08	8.64E-13
Technetium (43)	Tc-95m	4.15E+00	1.67E-01	9.76E+01	2.35E+01	1.89E+01	1.00E-08	8.42E-13
Technetium (43)	Tc-96	5.91E+01	1.17E-02	6.99E+02	9.38E+01	8.27E+01	1.00E-08	2.61E-13
Technetium (43)	Tc-96m	7.07E+03	9.80E-05	8.44E+04	1.13E+04	9.93E+03	1.00E-08	2.62E-13
Technetium (43)	Tc-97	2.67E-07	2.60E+06	1.96E+02	8.22E+02	1.58E+02	1.00E-08	1.12E-04
Technetium (43)	Tc-97m	2.81E+00	2.47E-01	7.27E+01	2.56E+03	7.07E+01	1.00E-08	4.74E-12
Technetium (43)	Tc-98	1.65E-07	4.20E+06	7.18E+00	2.80E+00	2.01E+00	1.00E-08	2.32E-06
Technetium (43)	Tc-99	3.28E-06	2.11E+05	2.08E+01	5.72E+04	2.08E+01	1.00E-08	1.22E-06
Technetium (43)	Tc-99m	1.01E+03	6.87E-04	6.05E+05	3.32E+04	3.15E+04	1.00E-08	5.99E-12
Tellurium (52)	Te-113	2.14E+05	3.23E-06	4.23E+06	3.50E+06	1.92E+06	1.00E-08	1.96E-12
Tellurium (52)	Te-114	2.40E+04	2.89E-05	1.40E+15	5.70E+12	5.68E+12	1.00E-08	5.24E-05
Tellurium (52)	Te-115	6.28E+04	1.10E-05	2.58E+11	2.00E+09	1.99E+09	1.00E-08	7.07E-09
Tellurium (52)	Te-115m	5.44E+04	1.27E-05	2.15E+11	1.68E+09	1.66E+09	1.00E-08	6.83E-09
Tellurium (52)	Te-116	2.44E+03	2.84E-04	1.43E+05	4.07E+03	3.95E+03	1.00E-08	3.65E-13
Tellurium (52)	Te-117	5.87E+03	1.18E-04	1.10E+06	1.36E+04	1.35E+04	1.00E-08	5.20E-13
Tellurium (52)	Te-118	4.22E+01	1.64E-02	1.85E+02	1.79E+02	9.11E+01	1.00E-08	4.95E-13
Tellurium (52)	Te-119	3.78E+02	1.83E-03	1.94E+04	1.92E+03	1.75E+03	1.00E-08	1.07E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Tellurium (52)	Te-119m	5.38E+01	1.29E-02	8.95E+02	1.45E+02	1.24E+02	1.00E-08	5.34E-13
Tellurium (52)	Te-121	1.32E+01	5.25E-02	3.89E+02	9.04E+01	7.34E+01	1.00E-08	1.30E-12
Tellurium (52)	Te-121m	1.64E+00	4.22E-01	9.90E+00	1.15E+01	5.31E+00	1.00E-08	7.59E-13
Tellurium (52)	Te-123	1.16E-15	6.00E+14	9.83E+00	1.52E+05	9.82E+00	9.49E-08	2.03E+03
Tellurium (52)	Te-123m	2.12E+00	3.27E-01	2.35E+01	6.84E+01	1.75E+01	1.00E-08	1.97E-12
Tellurium (52)	Te-125m	4.41E+00	1.57E-01	6.85E+01	6.24E+02	6.17E+01	1.00E-08	3.40E-12
Tellurium (52)	Te-127	6.49E+02	1.07E-03	5.10E+04	2.32E+05	4.18E+04	1.00E-08	1.59E-11
Tellurium (52)	Te-127m	2.32E+00	2.99E-01	1.37E+01	5.13E+02	1.33E+01	1.00E-08	1.41E-12
Tellurium (52)	Te-129	5.23E+03	1.32E-04	1.11E+06	1.69E+05	1.47E+05	1.00E-08	7.02E-12
Tellurium (52)	Te-129m	7.53E+00	9.21E-02	3.33E+01	2.15E+02	2.89E+01	1.00E-08	9.60E-13
Tellurium (52)	Te-131	1.46E+04	4.76E-05	8.97E+03	1.50E+05	8.47E+03	1.00E-08	1.48E-13
Tellurium (52)	Te-131m	2.02E+02	3.42E-03	1.14E+02	4.14E+02	8.96E+01	1.00E-08	1.13E-13
Tellurium (52)	Te-132	7.89E+01	8.78E-03	2.60E+02	1.24E+02	8.38E+01	1.00E-08	2.72E-13
Tellurium (52)	Te-133	2.91E+04	2.38E-05	9.02E+04	1.65E+05	5.82E+04	1.00E-08	5.16E-13
Tellurium (52)	Te-133m	6.57E+03	1.05E-04	1.92E+04	9.37E+03	6.29E+03	1.00E-08	2.47E-13
Tellurium (52)	Te-134	8.71E+03	7.95E-05	5.85E+05	9.85E+03	9.69E+03	1.00E-08	2.89E-13
Thorium (90)	Th-223	3.64E+07	1.90E-08		2.79E+33	2.79E+33	7.94E-06	3.31E+13
Thorium (90)	Th-224	2.08E+07	3.33E-08		1.61E+33	1.61E+33	1.26E-05	3.37E+13
Thorium (90)	Th-226	1.19E+04	5.82E-05	2.87E+03	3.91E+07	2.87E+03	1.61E+00	1.06E-13
Thorium (90)	Th-227	1.35E+01	5.12E-02	1.61E+00	1.00E+02	1.59E+00	1.00E-08	5.16E-14
Thorium (90)	Th-228	3.63E-01	1.91E+00	1.12E-01	3.30E+00	1.08E-01	7.93E-03	1.32E-13
Thorium (90)	Th-229	9.44E-05	7.34E+03	2.10E-02	1.11E+01	2.09E-02	4.83E-01	9.85E-11
Thorium (90)	Th-230	9.19E-06	7.54E+04	6.05E-03	2.38E+00	6.03E-03	8.82E+03	2.93E-10
Thorium (90)	Th-231	2.38E+02	2.91E-03	9.24E+03	5.86E+04	7.98E+03	1.00E-08	1.50E-11
Thorium (90)	Th-232	4.93E-11	1.41E+10	1.25E-02	1.70E+00	1.24E-02	1.76E+02	1.13E-04
Thorium (90)	Th-233	1.63E+04	4.24E-05	2.26E+05	3.03E+05	1.29E+05	1.00E-08	3.58E-12
Thorium (90)	Th-234	1.05E+01	6.60E-02	4.14E+01	3.21E+02	3.67E+01	1.00E-08	1.59E-12
Thorium (90)	Th-235	5.13E+04	1.35E-05	7.26E+11	9.39E+11	7.24E+11	4.49E+05	6.43E-06
Thorium (90)	Th-236	9.71E+03	7.13E-05	1.49E+06	3.72E+04	3.63E+04	1.00E-08	1.71E-12
Titanium (22)	Ti-44	1.16E-02	6.00E+01	2.18E+00	1.71E+00	9.59E-01	2.54E-03	7.09E-12
Titanium (22)	Ti-45	1.97E+03	3.52E-04	1.74E+05	8.53E+03	8.13E+03	1.00E-08	3.60E-13
Titanium (22)	Ti-51	6.32E+04	1.10E-05		1.73E+17	1.73E+17	1.00E-08	2.70E-01

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Titanium (22)	Ti-52	2.14E+05	3.23E-06		2.54E+17	2.54E+17	1.00E-08	1.20E-01
Thallium (81)	Tl-190	1.40E+05	4.95E-06	4.38E+07	2.49E+05	2.47E+05	1.00E-08	6.51E-13
Thallium (81)	Tl-190m	9.84E+04	7.04E-06	3.08E+07	1.75E+05	1.74E+05	1.00E-08	6.51E-13
Thallium (81)	Tl-194	1.10E+04	6.28E-05	3.04E+06	4.47E+04	4.40E+04	1.00E-08	1.50E-12
Thallium (81)	Tl-194m	1.11E+04	6.24E-05	3.56E+06	1.73E+04	1.72E+04	1.00E-08	5.82E-13
Thallium (81)	Tl-195	5.23E+03	1.32E-04	2.14E+05	1.46E+04	1.37E+04	1.00E-08	9.89E-13
Thallium (81)	Tl-196	3.30E+03	2.10E-04	8.66E+05	7.19E+03	7.13E+03	1.00E-08	8.22E-13
Thallium (81)	Tl-197	2.14E+03	3.24E-04	1.05E+05	1.66E+04	1.43E+04	1.00E-08	2.56E-12
Thallium (81)	Tl-198	1.15E+03	6.05E-04	2.07E+05	2.36E+03	2.33E+03	1.00E-08	7.82E-13
Thallium (81)	Tl-198m	3.25E+03	2.13E-04	4.85E+05	6.12E+03	6.05E+03	1.00E-08	7.16E-13
Thallium (81)	Tl-199	8.18E+02	8.47E-04	4.04E+05	1.34E+04	1.30E+04	1.00E-08	6.12E-12
Thallium (81)	Tl-200	2.33E+02	2.98E-03	1.54E+04	7.14E+02	6.83E+02	1.00E-08	1.14E-12
Thallium (81)	Tl-201	8.33E+01	8.32E-03	1.12E+04	3.93E+03	2.91E+03	1.00E-08	1.37E-11
Thallium (81)	Tl-202	2.07E+01	3.35E-02	6.04E+02	1.77E+02	1.37E+02	1.00E-08	2.60E-12
Thallium (81)	Tl-204	1.83E-01	3.78E+00	1.23E+01	3.76E+02	1.19E+01	1.00E-08	2.57E-11
Thallium (81)	Tl-206	8.67E+04	7.99E-06		7.88E+17	7.88E+17	1.00E-08	3.63E+00
Thallium (81)	Tl-206m	9.74E+04	7.12E-06		6.21E+16	6.21E+16	1.00E-08	2.55E-01
Thallium (81)	Tl-207	7.64E+04	9.08E-06		7.96E+17	7.96E+17	1.00E-08	4.18E+00
Thallium (81)	Tl-208	1.19E+05	5.81E-06		1.77E+17	1.77E+17	1.00E-08	5.98E-01
Thallium (81)	Tl-209	1.69E+05	4.11E-06	3.97E+07	2.20E+08	3.37E+07	1.00E-08	8.10E-11
Thallium (81)	Tl-210	2.80E+05	2.47E-06	6.76E+04	9.18E+08	6.76E+04	1.61E+00	9.82E-14
Thulium (69)	Tm-161	1.21E+04	5.75E-05	1.65E+06	4.64E+04	4.52E+04	1.00E-08	1.17E-12
Thulium (69)	Tm-162	1.68E+04	4.13E-05	1.52E+13	9.47E+10	9.41E+10	1.00E-08	1.76E-06
Thulium (69)	Tm-163	3.35E+03	2.07E-04	7.86E+05	1.02E+04	1.01E+04	1.00E-08	9.48E-13
Thulium (69)	Tm-164	1.82E+05	3.81E-06		6.19E+18	6.19E+18	1.00E-08	1.08E+01
Thulium (69)	Tm-165	2.02E+02	3.43E-03	7.15E+03	1.36E+03	1.14E+03	1.00E-08	1.81E-12
Thulium (69)	Tm-166	7.88E+02	8.79E-04	3.67E+04	1.65E+03	1.58E+03	1.00E-08	6.45E-13
Thulium (69)	Tm-167	2.73E+01	2.53E-02	6.27E+02	7.71E+02	3.46E+02	1.00E-08	4.10E-12
Thulium (69)	Tm-168	2.72E+00	2.55E-01	3.74E+01	9.32E+00	7.46E+00	1.00E-08	8.95E-13
Thulium (69)	Tm-170	1.97E+00	3.52E-01	2.33E+01	3.44E+02	2.18E+01	1.00E-08	3.66E-12
Thulium (69)	Tm-171	3.61E-01	1.92E+00	1.50E+02	8.41E+03	1.48E+02	1.00E-08	1.36E-10
Thulium (69)	Tm-172	9.55E+01	7.26E-03	7.50E+02	7.39E+02	3.72E+02	1.00E-08	1.30E-12

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Thulium (69)	Tm-173	7.37E+02	9.41E-04	3.27E+04	7.15E+03	5.87E+03	1.00E-08	2.67E-12
Thulium (69)	Tm-174	6.75E+04	1.03E-05		6.93E+15	6.93E+15	1.00E-08	3.47E-02
Thulium (69)	Tm-175	2.40E+04	2.89E-05	7.28E+05	2.43E+06	5.60E+05	1.00E-08	7.94E-12
Thulium (69)	Tm-176	1.97E+05	3.52E-06		3.03E+19	3.03E+19	1.00E-08	5.26E+01
Uranium (92)	U-227	3.31E+05	2.09E-06		8.54E+20	8.54E+20	1.00E-08	1.14E+03
Uranium (92)	U-228	4.00E+04	1.73E-05		1.06E+17	1.06E+17	1.00E-08	1.17E+00
Uranium (92)	U-230	1.22E+01	5.70E-02	1.75E+00	2.37E+03	1.75E+00	1.00E-08	6.42E-14
Uranium (92)	U-231	6.02E+01	1.15E-02	2.28E+03	3.38E+03	1.36E+03	1.00E-08	1.01E-11
Uranium (92)	U-232	1.01E-02	6.89E+01	3.06E-02	3.05E+00	3.03E-02	6.38E+00	1.36E-12
Uranium (92)	U-233	4.35E-06	1.59E+05	2.25E-02	1.28E+01	2.25E-02	3.35E+04	2.33E-09
Uranium (92)	U-234	2.82E-06	2.46E+05	9.20E-03	3.70E+00	9.18E-03	1.85E+05	1.48E-09
Uranium (92)	U-235	9.84E-10	7.04E+08	1.39E-02	5.32E+00	1.39E-02	4.49E+05	6.43E-06
Uranium (92)	U-235m	1.40E+04	4.95E-05	1.98E+11	7.58E+13	1.98E+11	4.49E+05	6.43E-06
Uranium (92)	U-236	2.96E-08	2.34E+07	2.87E-01	1.03E+03	2.87E-01	1.00E-08	4.44E-06
Uranium (92)	U-237	3.75E+01	1.85E-02	6.45E+02	1.14E+03	4.12E+02	1.00E-08	5.06E-12
Uranium (92)	U-238	1.55E-10	4.47E+09	5.35E-03	2.05E+00	5.34E-03	3.52E+06	1.59E-05
Uranium (92)	U-239	1.55E+04	4.46E-05	2.53E+05	3.59E+05	1.48E+05	1.00E-08	4.43E-12
Uranium (92)	U-240	4.31E+02	1.61E-03	5.15E+03	4.23E+03	2.32E+03	1.00E-08	2.51E-12
Uranium (92)	U-242	2.17E+04	3.20E-05	6.56E+08	1.24E+13	6.56E+08	1.00E-08	1.42E-08
Vanadium (23)	V-47	1.12E+04	6.20E-05	2.37E+06	3.99E+04	3.92E+04	1.00E-08	3.20E-13
Vanadium (23)	V-48	1.58E+01	4.38E-02	1.06E+02	2.19E+01	1.82E+01	1.00E-08	1.07E-13
Vanadium (23)	V-49	7.67E-01	9.04E-01	1.04E+03		1.04E+03	1.00E-08	1.29E-10
Vanadium (23)	V-50	4.62E-18	1.50E+17	3.92E+00	2.93E+00	1.68E+00	3.30E+00	3.52E+04
Vanadium (23)	V-52	9.73E+04	7.12E-06		2.08E+17	2.08E+17	1.00E-08	2.16E-01
Vanadium (23)	V-53	2.26E+05	3.06E-06		1.61E+19	1.61E+19	1.00E-08	7.33E+00
Tungsten (74)	W-177	2.76E+03	2.51E-04	2.22E+05	1.14E+04	1.08E+04	1.00E-08	1.35E-12
Tungsten (74)	W-178	1.17E+01	5.92E-02	6.29E+02	3.60E+02	2.29E+02	1.00E-08	6.75E-12
Tungsten (74)	W-179	9.83E+03	7.05E-05	5.82E+06	7.07E+05	6.31E+05	1.00E-08	2.23E-11
Tungsten (74)	W-179m	5.69E+04	1.22E-05	3.37E+07	4.10E+06	3.66E+06	1.00E-08	2.23E-11
Tungsten (74)	W-181	2.09E+00	3.32E-01	3.68E+02	2.63E+02	1.53E+02	1.00E-08	2.58E-11
Tungsten (74)	W-185	3.37E+00	2.06E-01	1.05E+02	7.83E+04	1.05E+02	1.00E-08	1.12E-11
Tungsten (74)	W-185m	2.28E+05	3.04E-06	7.11E+06	5.30E+09	7.10E+06	1.00E-08	1.12E-11

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Tungsten (74)	W-187	2.56E+02	2.71E-03	5.73E+03	2.17E+03	1.58E+03	1.00E-08	2.24E-12
Tungsten (74)	W-188	3.62E+00	1.91E-01	1.44E+01	9.32E+01	1.25E+01	1.00E-08	1.26E-12
Tungsten (74)	W-190	1.21E+04	5.71E-05	4.04E+10	5.75E+08	5.67E+08	1.00E-08	1.72E-08
Xenon (54)	Xe-120	9.11E+03	7.61E-05	4.18E+05	1.18E+04	1.15E+04	1.00E-08	2.94E-13
Xenon (54)	Xe-121	9.08E+03	7.63E-05	2.27E+05	1.47E+04	1.38E+04	1.00E-08	3.56E-13
Xenon (54)	Xe-122	3.02E+02	2.29E-03		1.03E+03	1.03E+03	1.00E-08	8.06E-13
Xenon (54)	Xe-123	2.92E+03	2.37E-04	1.76E+05	1.43E+04	1.33E+04	1.00E-08	1.08E-12
Xenon (54)	Xe-125	3.59E+02	1.93E-03	3.14E+02	4.83E+03	2.95E+02	1.00E-08	1.99E-13
Xenon (54)	Xe-127	6.95E+00	9.97E-02		1.02E+02	1.02E+02	1.00E-08	3.61E-12
Xenon (54)	Xe-127m	3.16E+05	2.19E-06		4.63E+06	4.63E+06	1.00E-08	3.61E-12
Xenon (54)	Xe-129m	2.85E+01	2.43E-02		2.56E+03	2.56E+03	1.00E-08	2.25E-11
Xenon (54)	Xe-131m	2.14E+01	3.24E-02		4.91E+03	4.91E+03	1.00E-08	5.84E-11
Xenon (54)	Xe-133	4.82E+01	1.44E-02		4.45E+03	4.45E+03	1.00E-08	2.38E-11
Xenon (54)	Xe-133m	1.16E+02	6.00E-03		5.70E+03	5.70E+03	1.00E-08	1.27E-11
Xenon (54)	Xe-135	6.64E+02	1.04E-03	1.11E+10	9.96E+03	9.96E+03	1.00E-08	3.93E-12
Xenon (54)	Xe-135m	2.38E+04	2.91E-05	3.99E+11	3.59E+05	3.59E+05	1.00E-08	3.95E-12
Xenon (54)	Xe-137	9.54E+04	7.26E-06	4.13E+06	2.87E+07	3.61E+06	1.00E-08	1.01E-11
Xenon (54)	Xe-138	2.59E+04	2.68E-05	3.58E+06	4.29E+04	4.24E+04	1.00E-08	4.39E-13
Yttrium (39)	Y-81	3.10E+05	2.23E-06	8.48E+07	1.93E+06	1.89E+06	1.00E-08	9.55E-13
Yttrium (39)	Y-83	5.14E+04	1.35E-05	3.14E+05	1.58E+05	1.05E+05	1.00E-08	3.29E-13
Yttrium (39)	Y-83m	1.28E+05	5.42E-06	7.80E+05	3.92E+05	2.61E+05	1.00E-08	3.29E-13
Yttrium (39)	Y-84m	9.22E+03	7.52E-05	9.00E+05	8.95E+03	8.87E+03	1.00E-08	1.57E-13
Yttrium (39)	Y-85	2.27E+03	3.06E-04	4.62E+04	5.02E+03	4.53E+03	1.00E-08	3.30E-13
Yttrium (39)	Y-85m	1.25E+03	5.55E-04	1.84E+04	2.66E+03	2.33E+03	1.00E-08	3.07E-13
Yttrium (39)	Y-86	4.12E+02	1.68E-03	5.76E+03	4.66E+02	4.31E+02	1.00E-08	1.75E-13
Yttrium (39)	Y-86m	7.59E+03	9.13E-05	1.01E+05	8.15E+03	7.54E+03	1.00E-08	1.66E-13
Yttrium (39)	Y-87	7.61E+01	9.11E-03	1.76E+03	3.94E+02	3.22E+02	1.00E-08	7.15E-13
Yttrium (39)	Y-87m	4.54E+02	1.53E-03	7.71E+03	1.70E+03	1.39E+03	1.00E-08	5.17E-13
Yttrium (39)	Y-88	2.37E+00	2.92E-01	2.69E+01	4.07E+00	3.53E+00	1.00E-08	2.54E-13
Yttrium (39)	Y-89m	1.40E+06	4.97E-07		1.58E+24	1.58E+24	1.00E-08	1.95E+05
Yttrium (39)	Y-90	9.47E+01	7.32E-03	4.72E+02	3.23E+03	4.12E+02	1.00E-08	7.60E-13
Yttrium (39)	Y-90m	1.90E+03	3.64E-04	8.91E+03	1.00E+04	4.72E+03	1.00E-08	4.33E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion	External Exposure	Total	Peak Dose	Total
				BDCC	BDCC	BDCC	Start Time	BDCC
				DL=1	DL=1	DL=1	Total	DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Yttrium (39)	Y-91	4.32E+00	1.60E-01	2.47E+01	2.21E+02	2.22E+01	1.00E-08	9.08E-13
Yttrium (39)	Y-91m	7.33E+03	9.46E-05	4.16E+04	4.73E+04	2.21E+04	1.00E-08	5.33E-13
Yttrium (39)	Y-92	1.71E+03	4.04E-04	4.63E+04	1.68E+04	1.23E+04	1.00E-08	1.28E-12
Yttrium (39)	Y-93	5.96E+02	1.16E-03	6.87E+03	1.03E+04	4.12E+03	1.00E-08	1.25E-12
Yttrium (39)	Y-94	1.95E+04	3.56E-05	1.37E+14	3.64E+12	3.54E+12	1.00E-08	3.32E-05
Yttrium (39)	Y-95	3.54E+04	1.96E-05	3.11E+05	9.61E+04	7.34E+04	1.00E-08	3.83E-13
Ytterbium (70)	Yb-162	1.93E+04	3.59E-05	2.41E+12	1.51E+10	1.50E+10	1.00E-08	2.44E-07
Ytterbium (70)	Yb-163	3.30E+04	2.10E-05	7.72E+06	1.00E+05	9.88E+04	1.00E-08	9.48E-13
Ytterbium (70)	Yb-164	4.81E+03	1.44E-04	7.01E+05	2.17E+04	2.10E+04	1.00E-08	1.39E-12
Ytterbium (70)	Yb-165	3.68E+04	1.88E-05	1.30E+06	2.47E+05	2.07E+05	1.00E-08	1.81E-12
Ytterbium (70)	Yb-166	1.07E+02	6.47E-03	1.15E+03	2.15E+02	1.81E+02	1.00E-08	5.45E-13
Ytterbium (70)	Yb-167	2.08E+04	3.33E-05	4.77E+05	5.86E+05	2.63E+05	1.00E-08	4.10E-12
Ytterbium (70)	Yb-169	7.90E+00	8.77E-02	1.29E+02	1.00E+02	5.64E+01	1.00E-08	2.34E-12
Ytterbium (70)	Yb-175	6.04E+01	1.15E-02	1.84E+03	6.14E+03	1.42E+03	1.00E-08	7.95E-12
Ytterbium (70)	Yb-177	3.18E+03	2.18E-04	6.82E+04	4.67E+04	2.77E+04	1.00E-08	3.00E-12
Ytterbium (70)	Yb-178	4.92E+03	1.41E-04	4.05E+05	7.71E+04	6.48E+04	1.00E-08	4.55E-12
Ytterbium (70)	Yb-179	4.55E+04	1.52E-05	2.82E+06	2.14E+06	1.22E+06	1.00E-08	9.29E-12
Zinc (30)	Zn-60	1.53E+05	4.53E-06	1.50E+13	8.27E+10	8.22E+10	1.00E-08	6.25E-08
Zinc (30)	Zn-61	2.45E+05	2.83E-06	2.80E+07	1.12E+06	1.08E+06	1.00E-08	5.19E-13
Zinc (30)	Zn-62	6.61E+02	1.05E-03	9.44E+03	1.62E+03	1.38E+03	1.00E-08	2.52E-13
Zinc (30)	Zn-63	9.47E+03	7.32E-05	1.58E+06	3.06E+04	3.00E+04	1.00E-08	3.87E-13
Zinc (30)	Zn-65	1.04E+00	6.69E-01	5.48E+00	1.12E+01	3.68E+00	1.00E-08	4.48E-13
Zinc (30)	Zn-69	6.46E+03	1.07E-04	2.80E+06	1.16E+06	8.19E+05	1.00E-08	1.70E-11
Zinc (30)	Zn-69m	4.41E+02	1.57E-03	1.62E+04	3.95E+03	3.17E+03	1.00E-08	9.63E-13
Zinc (30)	Zn-71	1.49E+05	4.66E-06		4.19E+18	4.19E+18	1.00E-08	3.88E+00
Zinc (30)	Zn-71m	1.53E+03	4.52E-04	8.50E+04	3.73E+03	3.57E+03	1.00E-08	3.21E-13
Zinc (30)	Zn-72	1.31E+02	5.31E-03	6.87E+02	1.87E+02	1.47E+02	1.00E-08	1.57E-13
Zirconium (40)	Zr-85	4.63E+04	1.50E-05	6.89E+05	9.88E+04	8.64E+04	1.00E-08	3.08E-13
Zirconium (40)	Zr-86	3.68E+02	1.88E-03	2.71E+03	3.86E+02	3.38E+02	1.00E-08	1.53E-13
Zirconium (40)	Zr-87	3.61E+03	1.92E-04	4.99E+04	6.83E+03	6.01E+03	1.00E-08	2.81E-13
Zirconium (40)	Zr-88	3.03E+00	2.28E-01	2.92E+01	5.30E+00	4.49E+00	1.00E-08	2.53E-13
Zirconium (40)	Zr-89	7.74E+01	8.95E-03	1.31E+03	2.64E+02	2.20E+02	1.00E-08	4.90E-13

Indoor Worker Dust BDCCs October 2024								
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)				
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Ingestion BDCC DL=1	External Exposure BDCC DL=1	Total BDCC DL=1	Peak Dose Start Time Total	Total BDCC DL=1
				(pCi/cm ²)	(pCi/cm ²)	(pCi/cm ²)	(yrs)	(mg/cm ²)
Zirconium (40)	Zr-89m	8.75E+04	7.92E-06	1.58E+06	3.18E+05	2.65E+05	1.00E-08	5.22E-13
Zirconium (40)	Zr-93	4.53E-07	1.53E+06	1.12E+01	5.63E+03	1.12E+01	2.16E+02	4.44E-06
Zirconium (40)	Zr-95	3.95E+00	1.75E-01	3.48E+01	1.07E+01	8.20E+00	1.00E-08	3.83E-13
Zirconium (40)	Zr-97	3.63E+02	1.91E-03	2.28E+03	8.49E+02	6.18E+02	1.00E-08	3.21E-13

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Actinium (89)	Ac-223	1.73E+05	4.00E-06		1.10E+04	1.10E+04	2.76E-14
Actinium (89)	Ac-224	2.18E+03	3.17E-04	1.52E-02	4.64E+02	1.52E-02	3.03E-18
Actinium (89)	Ac-225	2.53E+01	2.74E-02	5.87E-03	3.75E+03	5.87E-03	1.01E-16
Actinium (89)	Ac-226	2.07E+02	3.35E-03	3.84E-03	1.82E+03	3.84E-03	8.15E-18
Actinium (89)	Ac-227	3.18E-02	2.18E+01	6.80E-04	1.95E+03	6.80E-04	9.40E-15
Actinium (89)	Ac-228	9.87E+02	7.02E-04	1.14E-03	3.34E+02	1.14E-03	5.12E-19
Actinium (89)	Ac-230	1.79E+05	3.87E-06	4.32E-04	3.43E+02	4.32E-04	1.08E-21
Actinium (89)	Ac-231	4.86E+04	1.43E-05	1.71E-04	9.48E+02	1.71E-04	1.58E-21
Actinium (89)	Ac-232	1.84E+05	3.77E-06	6.01E-04	2.22E+02	6.01E-04	1.47E-21
Actinium (89)	Ac-233	1.51E+05	4.60E-06	5.23E-04	7.89E+02	5.23E-04	1.57E-21
Silver (47)	Ag-100m	1.63E+05	4.26E-06	4.00E+01	1.40E+02	3.11E+01	3.71E-17
Silver (47)	Ag-101	3.28E+04	2.11E-05	7.75E+01	3.77E+02	6.43E+01	3.84E-16
Silver (47)	Ag-102	2.82E+04	2.45E-05	2.45E+03	2.34E+02	2.14E+02	1.50E-15
Silver (47)	Ag-102m	4.73E+04	1.46E-05	4.99E+03	2.14E+02	2.05E+02	8.57E-16
Silver (47)	Ag-103	5.54E+03	1.25E-04	1.01E+02	9.88E+02	9.19E+01	3.31E-15
Silver (47)	Ag-104	5.26E+03	1.32E-04	1.18E+03	3.03E+02	2.41E+02	9.24E-15
Silver (47)	Ag-104m	1.09E+04	6.37E-05	1.50E+03	4.43E+02	3.43E+02	6.36E-15
Silver (47)	Ag-105	6.13E+00	1.13E-01	5.82E+01	1.70E+03	5.63E+01	1.87E-12
Silver (47)	Ag-105m	5.04E+04	1.38E-05	5.84E+01	1.70E+03	5.64E+01	2.28E-16
Silver (47)	Ag-106	1.52E+04	4.56E-05	2.97E+03	1.20E+03	8.54E+02	1.16E-14
Silver (47)	Ag-106m	3.05E+01	2.27E-02	4.16E+01	2.91E+02	3.64E+01	2.45E-13
Silver (47)	Ag-108	1.54E+05	4.51E-06		2.95E+04	2.95E+04	4.03E-14
Silver (47)	Ag-108m	1.66E-03	4.18E+02	1.34E+00	5.18E+02	1.34E+00	1.69E-10
Silver (47)	Ag-109m	5.52E+05	1.26E-06		2.37E+05	2.37E+05	9.10E-14
Silver (47)	Ag-110	8.88E+05	7.80E-07		1.52E+04	1.52E+04	3.66E-15
Silver (47)	Ag-110m	1.01E+00	6.84E-01	3.92E+00	2.93E+02	3.87E+00	8.15E-13
Silver (47)	Ag-111	3.40E+01	2.04E-02	2.79E+01	2.70E+04	2.78E+01	1.77E-13
Silver (47)	Ag-111m	3.37E+05	2.05E-06	2.81E+01	2.42E+04	2.80E+01	1.79E-17
Silver (47)	Ag-112	1.94E+03	3.57E-04	2.57E+02	1.11E+03	2.09E+02	2.34E-14
Silver (47)	Ag-113	1.13E+03	6.13E-04	4.36E-01	9.73E+03	4.36E-01	8.45E-17
Silver (47)	Ag-113m	3.18E+05	2.18E-06	4.36E-01	3.12E+03	4.36E-01	3.00E-19
Silver (47)	Ag-114	4.75E+06	1.46E-07		2.57E+03	2.57E+03	1.20E-16
Silver (47)	Ag-115	1.82E+04	3.81E-05	1.38E-01	9.63E+02	1.38E-01	1.69E-18
Silver (47)	Ag-116	1.36E+05	5.10E-06		3.51E+02	3.51E+02	5.81E-16
Silver (47)	Ag-117	2.97E+05	2.33E-06	1.77E+02	2.59E+02	1.05E+02	8.05E-17
Silver (47)	Ag-99	1.76E+05	3.93E-06	4.60E+02	1.92E+02	1.35E+02	1.48E-16
Aluminum (13)	Al-26	9.67E-07	7.17E+05	4.74E-01	2.93E+02	4.73E-01	2.47E-08
Aluminum (13)	Al-28	1.63E+05	4.26E-06		4.22E+02	4.22E+02	1.41E-16
Aluminum (13)	Al-29	5.55E+04	1.25E-05		5.59E+02	5.59E+02	5.67E-16
Americium (95)	Am-237	4.99E+03	1.39E-04	4.66E-04	9.15E+02	4.66E-04	4.29E-20
Americium (95)	Am-238	3.72E+03	1.86E-04	2.20E-04	3.03E+02	2.20E-04	2.74E-20
Americium (95)	Am-239	5.10E+02	1.36E-03	1.21E-04	1.00E+03	1.21E-04	1.10E-19
Americium (95)	Am-240	1.20E+02	5.80E-03	2.45E-04	2.36E+02	2.45E-04	9.56E-19
Americium (95)	Am-241	1.60E-03	4.32E+02	2.52E-04	1.54E+03	2.52E-04	7.36E-14
Americium (95)	Am-242	3.79E+02	1.83E-03	2.14E-04	4.48E+02	2.14E-04	2.65E-19
Americium (95)	Am-242m	4.91E-03	1.41E+02	1.56E-04	4.47E+02	1.56E-04	1.49E-14

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Americium (95)	Am-243	9.40E-05	7.37E+03	9.93E-05	1.01E+03	9.93E-05	4.98E-13
Americium (95)	Am-244	6.01E+02	1.15E-03	2.30E-04	2.53E+02	2.30E-04	1.81E-19
Americium (95)	Am-244m	1.40E+04	4.95E-05	2.30E-04	3.31E+02	2.30E-04	7.79E-21
Americium (95)	Am-245	2.96E+03	2.34E-04	1.71E-04	1.26E+03	1.71E-04	2.74E-20
Americium (95)	Am-246	9.34E+03	7.42E-05	1.51E-04	3.19E+02	1.51E-04	7.70E-21
Americium (95)	Am-246m	1.46E+04	4.76E-05	1.51E-04	2.87E+02	1.51E-04	4.94E-21
Americium (95)	Am-247	1.58E+04	4.38E-05	8.50E-05	6.48E+02	8.50E-05	2.57E-21
Argon (18)	Ar-37	7.22E+00	9.60E-02				
Argon (18)	Ar-39	2.58E-03	2.69E+02		3.26E+05	3.26E+05	9.58E-06
Argon (18)	Ar-41	3.32E+03	2.09E-04		6.10E+02	6.10E+02	1.46E-14
Argon (18)	Ar-42	2.11E-02	3.29E+01	1.32E+02	2.50E+03	1.26E+02	4.87E-10
Argon (18)	Ar-43	6.78E+04	1.02E-05	1.25E+02	3.16E+02	8.96E+01	1.10E-16
Argon (18)	Ar-44	3.07E+04	2.26E-05	1.35E+03	1.76E+02	1.55E+02	4.33E-16
Arsenic (33)	As-68	1.44E+05	4.81E-06	1.61E+00	1.71E+02	1.60E+00	1.46E-18
Arsenic (33)	As-69	2.39E+04	2.90E-05	1.70E+02	3.90E+02	1.18E+02	6.61E-16
Arsenic (33)	As-70	6.92E+03	1.00E-04	6.26E+02	1.88E+02	1.44E+02	2.83E-15
Arsenic (33)	As-71	9.30E+01	7.45E-03	1.19E+02	1.47E+03	1.10E+02	1.63E-13
Arsenic (33)	As-72	2.33E+02	2.97E-03	4.74E+01	4.57E+02	4.30E+01	2.57E-14
Arsenic (33)	As-73	3.15E+00	2.20E-01	3.56E+01	2.44E+05	3.56E+01	1.60E-12
Arsenic (33)	As-74	1.42E+01	4.87E-02	1.94E+01	1.10E+03	1.91E+01	1.93E-13
Arsenic (33)	As-76	2.35E+02	2.95E-03	5.93E+01	1.88E+03	5.75E+01	3.61E-14
Arsenic (33)	As-77	1.56E+02	4.43E-03	1.12E+02	7.72E+04	1.12E+02	1.07E-13
Arsenic (33)	As-78	4.02E+03	1.73E-04	5.01E+02	5.98E+02	2.73E+02	1.03E-14
Arsenic (33)	As-79	4.04E+04	1.71E-05	7.98E+00	1.44E+04	7.97E+00	3.02E-17
Astatine (85)	At-204	3.96E+04	1.75E-05	6.43E+01	1.26E+02	4.25E+01	4.25E-16
Astatine (85)	At-205	1.39E+04	4.98E-05	1.94E+01	1.85E+02	1.76E+01	5.03E-16
Astatine (85)	At-206	1.19E+04	5.82E-05	7.12E-01	1.22E+02	7.08E-01	2.38E-17
Astatine (85)	At-207	3.37E+03	2.05E-04	1.36E+00	1.69E+02	1.35E+00	1.60E-16
Astatine (85)	At-208	3.72E+03	1.86E-04	7.32E-03	2.66E+02	7.32E-03	7.94E-19
Astatine (85)	At-209	1.12E+03	6.18E-04	5.52E-03	3.52E+02	5.52E-03	2.00E-18
Astatine (85)	At-210	7.49E+02	9.25E-04	1.15E-02	2.67E+02	1.15E-02	6.27E-18
Astatine (85)	At-211	8.42E+02	8.24E-04	3.68E-01	1.22E+03	3.67E-01	1.79E-16
Astatine (85)	At-215	2.19E+11	3.17E-12		1.48E+04	1.48E+04	2.82E-20
Astatine (85)	At-216	7.28E+10	9.51E-12	3.27E+00	5.71E+02	3.25E+00	1.87E-23
Astatine (85)	At-217	6.77E+08	1.02E-09	1.52E+00	4.58E+03	1.52E+00	9.46E-22
Astatine (85)	At-218	1.46E+07	4.76E-08	4.97E-03	5.26E+02	4.97E-03	1.44E-22
Astatine (85)	At-219	3.90E+05	1.78E-06	4.10E+00	2.20E+03	4.09E+00	4.45E-18
Astatine (85)	At-220	9.82E+04	7.06E-06	4.44E-01	3.94E+02	4.43E-01	1.93E-18
Gold (79)	Au-186	3.40E+04	2.04E-05	1.20E-02	2.14E+02	1.20E-02	1.27E-19
Gold (79)	Au-187	4.34E+04	1.60E-05	3.11E+02	4.16E+02	1.78E+02	1.49E-15
Gold (79)	Au-190	8.51E+03	8.14E-05	5.36E-03	3.23E+02	5.36E-03	2.32E-19
Gold (79)	Au-191	1.91E+03	3.63E-04	1.09E+02	1.01E+03	9.82E+01	1.91E-14
Gold (79)	Au-192	1.23E+03	5.64E-04	4.70E+02	4.04E+02	2.17E+02	6.58E-14
Gold (79)	Au-193	3.44E+02	2.01E-03	6.36E+01	5.85E+03	6.29E+01	6.85E-14
Gold (79)	Au-193m	5.60E+06	1.24E-07	6.36E+01	2.54E+03	6.20E+01	4.14E-18
Gold (79)	Au-194	1.60E+02	4.34E-03	1.94E+02	7.80E+02	1.55E+02	3.66E-13

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Gold (79)	Au-195	1.36E+00	5.10E-01	2.70E+01	1.39E+04	2.70E+01	7.51E-12
Gold (79)	Au-195m	7.17E+05	9.67E-07	2.70E+01	3.34E+03	2.68E+01	1.42E-17
Gold (79)	Au-196	4.09E+01	1.69E-02	1.44E+02	1.86E+03	1.34E+02	1.24E-12
Gold (79)	Au-196m	6.32E+02	1.10E-03	6.18E+01	1.25E+03	5.89E+01	3.54E-14
Gold (79)	Au-198	9.39E+01	7.38E-03	5.49E+01	2.08E+03	5.35E+01	2.19E-13
Gold (79)	Au-198m	1.11E+02	6.22E-03	1.78E+01	9.35E+02	1.75E+01	6.03E-14
Gold (79)	Au-199	8.06E+01	8.60E-03	6.01E+01	9.45E+03	5.97E+01	2.86E-13
Gold (79)	Au-200	7.53E+03	9.21E-05	1.31E+03	2.82E+03	8.92E+02	4.60E-14
Gold (79)	Au-200m	3.25E+02	2.13E-03	6.74E+01	4.13E+02	5.79E+01	6.92E-14
Gold (79)	Au-201	1.40E+04	4.95E-05	2.66E+03	2.10E+04	2.36E+03	6.58E-14
Gold (79)	Au-202	7.59E+05	9.13E-07		4.21E+03	4.21E+03	2.18E-15
Barium (56)	Ba-124	3.31E+04	2.09E-05	1.99E+03	4.72E+02	3.82E+02	2.78E-15
Barium (56)	Ba-126	3.64E+03	1.90E-04	4.06E+02	4.78E+02	2.20E+02	1.47E-14
Barium (56)	Ba-127	2.87E+04	2.42E-05	8.92E+02	6.00E+02	3.59E+02	3.08E-15
Barium (56)	Ba-128	1.04E+02	6.66E-03	3.28E+01	8.82E+02	3.16E+01	7.54E-14
Barium (56)	Ba-129	2.72E+03	2.55E-04	4.22E+02	1.47E+03	3.28E+02	3.01E-14
Barium (56)	Ba-129m	2.81E+03	2.47E-04	3.62E+02	4.51E+02	2.01E+02	1.79E-14
Barium (56)	Ba-131	2.20E+01	3.15E-02	5.36E+01	1.85E+03	5.21E+01	6.02E-13
Barium (56)	Ba-131m	2.49E+04	2.78E-05	5.31E+01	1.64E+03	5.14E+01	5.24E-16
Barium (56)	Ba-133	6.59E-02	1.05E+01	4.83E+00	2.32E+03	4.82E+00	1.89E-11
Barium (56)	Ba-133m	1.56E+02	4.44E-03	4.60E+00	2.01E+03	4.59E+00	7.60E-15
Barium (56)	Ba-135m	2.12E+02	3.28E-03	1.30E+02	1.74E+04	1.29E+02	1.60E-13
Barium (56)	Ba-137m	1.43E+05	4.86E-06		1.39E+03	1.39E+03	2.60E-15
Barium (56)	Ba-139	4.39E+03	1.58E-04	7.72E+02	1.40E+04	7.32E+02	4.50E-14
Barium (56)	Ba-140	1.98E+01	3.49E-02	6.87E+00	3.15E+02	6.72E+00	9.21E-14
Barium (56)	Ba-141	1.99E+04	3.48E-05	1.24E+01	7.74E+02	1.22E+01	1.68E-16
Barium (56)	Ba-142	3.44E+04	2.02E-05	4.09E+02	2.24E+02	1.45E+02	1.16E-15
Beryllium (4)	Be-10	4.59E-07	1.51E+06	1.48E+00	2.70E+05	1.48E+00	6.24E-08
Beryllium (4)	Be-7	4.75E+00	1.46E-01	8.45E+02	1.70E+04	8.05E+02	2.30E-12
Bismuth (83)	Bi-197	3.92E+04	1.77E-05	1.05E+01	2.21E+02	1.01E+01	9.82E-17
Bismuth (83)	Bi-200	1.00E+04	6.93E-05	8.15E+01	2.11E+02	5.88E+01	2.28E-15
Bismuth (83)	Bi-201	3.37E+03	2.05E-04	1.20E+02	3.00E+02	8.55E+01	9.89E-15
Bismuth (83)	Bi-202	3.53E+03	1.96E-04	1.01E+00	2.57E+02	1.01E+00	1.12E-16
Bismuth (83)	Bi-203	5.16E+02	1.34E-03	9.01E+01	2.97E+02	6.91E+01	5.28E-14
Bismuth (83)	Bi-204	5.41E+02	1.28E-03	1.41E+02	2.60E+02	9.12E+01	6.68E-14
Bismuth (83)	Bi-205	1.65E+01	4.19E-02	2.55E+01	4.69E+02	2.42E+01	5.83E-13
Bismuth (83)	Bi-206	4.05E+01	1.71E-02	2.51E+01	2.48E+02	2.28E+01	2.25E-13
Bismuth (83)	Bi-207	2.11E-02	3.29E+01	1.32E+00	5.34E+02	1.32E+00	2.52E-11
Bismuth (83)	Bi-208	1.88E-06	3.68E+05	1.41E+00	2.78E+02	1.40E+00	3.01E-07
Bismuth (83)	Bi-210	5.05E+01	1.37E-02	1.12E-02	1.45E+05	1.12E-02	9.05E-17
Bismuth (83)	Bi-210m	2.28E-07	3.04E+06	5.05E-03	3.18E+03	5.05E-03	9.03E-09
Bismuth (83)	Bi-211	1.70E+05	4.07E-06		1.48E+04	1.48E+04	3.57E-14
Bismuth (83)	Bi-212	6.02E+03	1.15E-04	3.27E+00	5.72E+02	3.25E+00	2.23E-16
Bismuth (83)	Bi-212n	5.20E+04	1.33E-05		8.57E+03	8.57E+03	6.77E-14
Bismuth (83)	Bi-213	7.99E+03	8.67E-05	1.52E+00	4.59E+03	1.52E+00	7.86E-17
Bismuth (83)	Bi-214	1.83E+04	3.79E-05	4.97E-03	5.25E+02	4.97E-03	1.13E-19

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Bismuth (83)	Bi-215	4.79E+04	1.45E-05	3.97E+00	2.14E+03	3.97E+00	3.45E-17
Bismuth (83)	Bi-216	1.68E+05	4.13E-06	4.44E-01	3.55E+02	4.44E-01	1.11E-18
Berkelium (97)	Bk-245	5.12E+01	1.35E-02	1.71E-04	9.96E+02	1.71E-04	1.59E-18
Berkelium (97)	Bk-246	1.41E+02	4.93E-03	1.51E-04	3.05E+02	1.51E-04	5.12E-19
Berkelium (97)	Bk-247	5.02E-04	1.38E+03	7.50E-05	8.67E+02	7.50E-05	7.15E-14
Berkelium (97)	Bk-248m	2.56E+02	2.71E-03	1.45E-04	2.77E+02	1.45E-04	2.73E-19
Berkelium (97)	Bk-249	7.67E-01	9.04E-01	1.09E-04	8.79E+02	1.09E-04	6.89E-17
Berkelium (97)	Bk-250	1.89E+03	3.67E-04	1.44E-04	2.95E+02	1.44E-04	3.71E-20
Berkelium (97)	Bk-251	6.55E+03	1.06E-04	6.62E-05	6.20E+02	6.62E-05	4.92E-21
Bromine (35)	Br-72	2.78E+05	2.49E-06	1.02E+01	1.68E+02	9.61E+00	4.83E-18
Bromine (35)	Br-73	1.07E+05	6.47E-06	3.13E+01	3.35E+02	2.86E+01	3.78E-17
Bromine (35)	Br-74	1.43E+04	4.83E-05	1.14E+03	1.63E+02	1.43E+02	1.43E-15
Bromine (35)	Br-74m	7.92E+03	8.75E-05	6.71E+02	1.88E+02	1.47E+02	2.66E-15
Bromine (35)	Br-75	3.77E+03	1.84E-04	3.54E+01	5.34E+02	3.32E+01	1.28E-15
Bromine (35)	Br-76	3.75E+02	1.85E-03	1.06E+02	2.80E+02	7.70E+01	3.03E-14
Bromine (35)	Br-76m	1.67E+07	4.15E-08	1.07E+02	2.79E+02	7.71E+01	6.81E-19
Bromine (35)	Br-77	1.06E+02	6.51E-03	5.05E+02	2.68E+03	4.25E+02	5.97E-13
Bromine (35)	Br-77m	8.51E+04	8.14E-06	5.05E+02	2.57E+03	4.22E+02	7.41E-16
Bromine (35)	Br-78	5.64E+04	1.23E-05		8.00E+02	8.00E+02	2.15E-15
Bromine (35)	Br-80	2.06E+04	3.36E-05	3.12E+03	9.43E+03	2.35E+03	1.77E-14
Bromine (35)	Br-80m	1.37E+03	5.05E-04	3.80E+02	8.89E+03	3.64E+02	4.12E-14
Bromine (35)	Br-82	1.72E+02	4.03E-03	7.00E+01	3.07E+02	5.70E+01	5.28E-14
Bromine (35)	Br-82m	5.94E+04	1.17E-05	7.17E+01	3.15E+02	5.84E+01	1.56E-16
Bromine (35)	Br-83	2.53E+03	2.74E-04	8.95E+02	7.34E+04	8.84E+02	5.63E-14
Bromine (35)	Br-84	1.15E+04	6.05E-05	1.17E+03	4.22E+02	3.10E+02	4.42E-15
Bromine (35)	Br-84m	6.07E+04	1.14E-05		2.86E+02	2.86E+02	7.69E-16
Bromine (35)	Br-85	1.26E+05	5.52E-06		3.45E+03	3.45E+03	4.53E-15
Carbon (6)	C-10	1.14E+06	6.11E-07		4.75E+02	4.75E+02	8.12E-18
Carbon (6)	C-11	1.79E+04	3.88E-05	2.48E+03	8.23E+02	6.18E+02	7.38E-16
Carbon (6)	C-14	1.22E-04	5.70E+03	8.79E+00	1.44E+07	8.79E+00	1.96E-09
Calcium (20)	Ca-41	6.79E-06	1.02E+05	2.35E+02		2.35E+02	2.75E-06
Calcium (20)	Ca-45	1.55E+00	4.46E-01	1.35E+01	2.47E+06	1.35E+01	7.61E-13
Calcium (20)	Ca-47	5.58E+01	1.24E-02	1.69E+01	6.83E+02	1.65E+01	2.70E-14
Calcium (20)	Ca-49	4.18E+04	1.66E-05	1.16E+03	2.24E+02	1.87E+02	4.27E-16
Cadmium (48)	Cd-101	2.68E+05	2.59E-06	7.75E+01	1.73E+02	5.35E+01	3.92E-17
Cadmium (48)	Cd-102	6.62E+04	1.05E-05	4.73E+03	1.77E+02	1.71E+02	5.10E-16
Cadmium (48)	Cd-103	4.99E+04	1.39E-05	1.01E+02	2.72E+02	7.38E+01	2.96E-16
Cadmium (48)	Cd-104	6.31E+03	1.10E-04	5.72E+02	3.96E+02	2.34E+02	7.48E-15
Cadmium (48)	Cd-105	6.56E+03	1.06E-04	5.66E+01	4.50E+02	5.03E+01	1.56E-15
Cadmium (48)	Cd-107	9.34E+02	7.42E-04	5.91E+02	7.66E+04	5.87E+02	1.30E-13
Cadmium (48)	Cd-109	5.48E-01	1.26E+00	7.83E+00	1.65E+05	7.83E+00	3.02E-12
Cadmium (48)	Cd-111m	7.51E+03	9.23E-05	2.03E+03	3.13E+03	1.23E+03	3.53E-14
Cadmium (48)	Cd-113	9.00E-17	7.70E+15	4.36E-01	1.51E+06	4.36E-01	1.06E+03
Cadmium (48)	Cd-113m	4.91E-02	1.41E+01	4.61E-01	4.04E+05	4.61E-01	2.06E-12
Cadmium (48)	Cd-115	1.14E+02	6.10E-03	1.39E-01	2.38E+03	1.39E-01	2.72E-16
Cadmium (48)	Cd-115m	5.67E+00	1.22E-01	1.29E-01	1.82E+04	1.29E-01	5.09E-15

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Cadmium (48)	Cd-117	2.44E+03	2.84E-04	1.76E+02	5.30E+02	1.32E+02	1.23E-14
Cadmium (48)	Cd-117m	1.81E+03	3.84E-04	1.86E+02	2.90E+02	1.13E+02	1.42E-14
Cadmium (48)	Cd-118	7.24E+03	9.57E-05	5.63E+02	6.48E+03	5.18E+02	1.64E-14
Cadmium (48)	Cd-119	1.35E+05	5.12E-06	2.15E+03	4.24E+02	3.54E+02	6.05E-16
Cadmium (48)	Cd-119m	1.66E+05	4.19E-06	1.51E+03	2.56E+02	2.19E+02	3.06E-16
Cerium (58)	Ce-130	1.59E+04	4.36E-05	1.27E+03	3.02E+02	2.44E+02	3.86E-15
Cerium (58)	Ce-131	3.57E+04	1.94E-05	5.13E+01	3.04E+02	4.39E+01	3.12E-16
Cerium (58)	Ce-132	1.73E+03	4.01E-04	1.38E+02	3.60E+02	9.99E+01	1.48E-14
Cerium (58)	Ce-133	3.76E+03	1.85E-04	4.79E+00	8.26E+02	4.76E+00	3.27E-16
Cerium (58)	Ce-133m	1.24E+03	5.59E-04	4.76E+00	3.67E+02	4.70E+00	9.78E-16
Cerium (58)	Ce-134	8.00E+01	8.66E-03	3.16E+01	1.14E+03	3.08E+01	9.99E-14
Cerium (58)	Ce-135	3.43E+02	2.02E-03	2.90E+02	1.02E+03	2.26E+02	1.72E-13
Cerium (58)	Ce-137	6.75E+02	1.03E-03	5.72E+00	3.25E+04	5.72E+00	2.26E-15
Cerium (58)	Ce-137m	1.76E+02	3.93E-03	5.43E+00	1.21E+04	5.42E+00	8.17E-15
Cerium (58)	Ce-139	1.84E+00	3.77E-01	2.54E+01	6.27E+03	2.53E+01	3.71E-12
Cerium (58)	Ce-141	7.78E+00	8.91E-02	1.31E+01	1.20E+04	1.31E+01	4.61E-13
Cerium (58)	Ce-143	1.84E+02	3.77E-03	1.47E+01	3.10E+03	1.46E+01	2.21E-14
Cerium (58)	Ce-144	8.88E-01	7.81E-01	2.68E-03	1.16E+04	2.68E-03	8.44E-16
Cerium (58)	Ce-145	1.21E+05	5.73E-06	2.69E+02	9.93E+02	2.12E+02	4.92E-16
Californium (98)	Cf-244	1.88E+04	3.69E-05	5.35E-04	5.21E+02	5.35E-04	1.35E-20
Californium (98)	Cf-246	1.70E+02	4.08E-03	2.14E-04	4.53E+02	2.14E-04	6.01E-19
Californium (98)	Cf-247	1.95E+03	3.55E-04	7.50E-05	8.00E+02	7.50E-05	1.84E-20
Californium (98)	Cf-248	7.57E-01	9.15E-01	2.22E-04	3.34E+02	2.22E-04	1.41E-16
Californium (98)	Cf-249	1.97E-03	3.51E+02	1.09E-04	8.79E+02	1.09E-04	2.68E-14
Californium (98)	Cf-250	5.30E-02	1.31E+01	1.44E-04	4.40E+02	1.44E-04	1.32E-15
Californium (98)	Cf-251	7.70E-04	9.00E+02	6.62E-05	6.59E+02	6.62E-05	4.19E-14
Californium (98)	Cf-252	2.62E-01	2.65E+00	8.10E-05	1.89E+02	8.10E-05	1.51E-16
Californium (98)	Cf-253	1.42E+01	4.88E-02	1.08E-04	8.78E+02	1.08E-04	3.74E-18
Californium (98)	Cf-254	4.18E+00	1.66E-01	9.62E-04	4.54E+01	9.62E-04	1.13E-16
Californium (98)	Cf-255	4.29E+03	1.62E-04	6.58E-05	6.53E+02	6.58E-05	7.59E-21
Chlorine (17)	Cl-34	1.43E+07	4.84E-08		7.86E+02	7.86E+02	3.62E-18
Chlorine (17)	Cl-34m	1.14E+04	6.09E-05	9.83E+02	3.02E+02	2.31E+02	1.34E-15
Chlorine (17)	Cl-36	2.30E-06	3.01E+05	1.35E+00	2.26E+05	1.35E+00	4.11E-08
Chlorine (17)	Cl-38	9.78E+03	7.09E-05	9.48E+02	5.10E+02	3.32E+02	2.50E-15
Chlorine (17)	Cl-39	6.55E+03	1.06E-04	9.34E+02	5.37E+02	3.41E+02	3.94E-15
Chlorine (17)	Cl-40	2.70E+05	2.57E-06		1.79E+02	1.79E+02	5.16E-17
Curium (96)	Cm-238	2.53E+03	2.74E-04	2.24E-04	2.95E+02	2.24E-04	4.10E-20
Curium (96)	Cm-239	2.09E+03	3.31E-04	1.21E-04	7.83E+02	1.21E-04	2.68E-20
Curium (96)	Cm-240	9.37E+00	7.40E-02	5.35E-04	5.21E+02	5.35E-04	2.66E-17
Curium (96)	Cm-241	7.71E+00	8.99E-02	2.54E-04	8.23E+02	2.54E-04	1.54E-17
Curium (96)	Cm-242	1.55E+00	4.46E-01	2.15E-04	4.53E+02	2.15E-04	6.49E-17
Curium (96)	Cm-243	2.38E-02	2.91E+01	1.17E-04	1.12E+03	1.17E-04	2.31E-15
Curium (96)	Cm-244	3.83E-02	1.81E+01	2.30E-04	3.34E+02	2.30E-04	2.85E-15
Curium (96)	Cm-245	8.15E-05	8.50E+03	1.71E-04	1.32E+03	1.71E-04	9.96E-13
Curium (96)	Cm-246	1.46E-04	4.76E+03	1.51E-04	4.42E+02	1.51E-04	4.94E-13
Curium (96)	Cm-247	4.44E-08	1.56E+07	8.50E-05	7.21E+02	8.50E-05	9.17E-10

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Curium (96)	Cm-248	1.99E-06	3.48E+05	8.03E-05	2.07E+02	8.03E-05	1.94E-11
Curium (96)	Cm-249	5.68E+03	1.22E-04	1.09E-04	8.58E+02	1.09E-04	9.29E-21
Curium (96)	Cm-250	8.35E-05	8.30E+03	2.08E-05	5.46E+01	2.08E-05	1.21E-13
Curium (96)	Cm-251	2.17E+04	3.20E-05	6.62E-05	5.71E+02	6.62E-05	1.49E-21
Cobalt (27)	Co-54m	2.46E+05	2.82E-06		2.03E+02	2.03E+02	8.63E-17
Cobalt (27)	Co-55	3.46E+02	2.00E-03	3.49E+01	4.09E+02	3.22E+01	9.91E-15
Cobalt (27)	Co-56	3.28E+00	2.12E-01	7.32E+00	2.13E+02	7.08E+00	2.35E-13
Cobalt (27)	Co-57	9.31E-01	7.44E-01	4.83E+01	7.53E+03	4.80E+01	5.70E-12
Cobalt (27)	Co-58	3.57E+00	1.94E-01	2.31E+01	8.45E+02	2.25E+01	7.09E-13
Cobalt (27)	Co-58m	6.72E+02	1.03E-03	2.29E+01	8.45E+02	2.23E+01	3.74E-15
Cobalt (27)	Co-60	1.31E-01	5.27E+00	1.64E+00	3.15E+02	1.63E+00	1.44E-12
Cobalt (27)	Co-60m	3.48E+04	1.99E-05	1.64E+00	3.15E+02	1.63E+00	5.46E-18
Cobalt (27)	Co-61	3.68E+03	1.88E-04	9.08E+02	9.24E+03	8.27E+02	2.66E-14
Cobalt (27)	Co-62	2.43E+05	2.85E-06		4.74E+02	4.74E+02	2.35E-16
Cobalt (27)	Co-62m	2.62E+04	2.65E-05	2.15E+03	2.89E+02	2.54E+02	1.17E-15
Chromium (24)	Cr-48	2.82E+02	2.46E-03	1.62E+01	2.42E+02	1.52E+01	5.03E-15
Chromium (24)	Cr-49	8.61E+03	8.05E-05	4.45E+02	8.02E+02	2.86E+02	3.16E-15
Chromium (24)	Cr-51	9.13E+00	7.59E-02	1.25E+03	2.68E+04	1.19E+03	1.29E-11
Chromium (24)	Cr-55	1.04E+05	6.65E-06		3.75E+04	3.75E+04	3.84E-14
Chromium (24)	Cr-56	6.13E+04	1.13E-05	3.51E+02	4.40E+02	1.95E+02	3.46E-16
Cesium (55)	Cs-121	1.41E+05	4.92E-06	7.05E+01	2.26E+02	5.38E+01	8.95E-17
Cesium (55)	Cs-121m	1.79E+05	3.87E-06	7.05E+01	2.15E+02	5.31E+01	6.96E-17
Cesium (55)	Cs-123	6.19E+04	1.12E-05	1.28E+01	4.47E+02	1.25E+01	4.80E-17
Cesium (55)	Cs-124	7.10E+05	9.77E-07		6.91E+02	6.91E+02	2.34E-16
Cesium (55)	Cs-125	8.09E+03	8.56E-05	3.27E+00	8.36E+02	3.26E+00	9.76E-17
Cesium (55)	Cs-126	2.22E+05	3.12E-06		7.09E+02	7.09E+02	7.81E-16
Cesium (55)	Cs-127	9.71E+02	7.13E-04	1.15E+03	1.26E+03	6.01E+02	1.52E-13
Cesium (55)	Cs-128	1.00E+05	6.93E-06		9.29E+02	9.29E+02	2.30E-15
Cesium (55)	Cs-129	1.89E+02	3.66E-03	5.78E+02	3.35E+03	4.93E+02	6.51E-13
Cesium (55)	Cs-130	1.25E+04	5.56E-05	3.34E+03	1.68E+03	1.12E+03	2.26E-14
Cesium (55)	Cs-130m	1.05E+05	6.58E-06	3.34E+03	1.55E+03	1.06E+03	2.53E-15
Cesium (55)	Cs-131	2.61E+01	2.65E-02	9.47E+02	1.56E+05	9.41E+02	9.16E-12
Cesium (55)	Cs-132	3.90E+01	1.78E-02	1.48E+02	1.19E+03	1.31E+02	8.62E-13
Cesium (55)	Cs-134	3.36E-01	2.06E+00	2.43E+00	5.31E+02	2.42E+00	1.88E-12
Cesium (55)	Cs-134m	2.09E+03	3.31E-04	2.43E+00	5.25E+02	2.42E+00	3.00E-16
Cesium (55)	Cs-135	3.01E-07	2.30E+06	4.32E+00	1.73E+06	4.32E+00	3.76E-06
Cesium (55)	Cs-135m	6.87E+03	1.01E-04	4.32E+00	5.13E+02	4.28E+00	1.63E-16
Cesium (55)	Cs-136	1.92E+01	3.61E-02	1.78E+01	3.82E+02	1.70E+01	2.33E-13
Cesium (55)	Cs-137	2.30E-02	3.02E+01	1.30E+00	1.47E+03	1.30E+00	1.50E-11
Cesium (55)	Cs-138	1.09E+04	6.36E-05	1.00E+03	3.26E+02	2.46E+02	6.04E-15
Cesium (55)	Cs-138m	1.25E+05	5.54E-06	1.24E+03	3.34E+02	2.63E+02	5.62E-16
Cesium (55)	Cs-139	3.93E+04	1.76E-05	7.72E+02	1.95E+03	5.53E+02	3.80E-15
Cesium (55)	Cs-140	3.43E+05	2.02E-06	6.87E+00	1.80E+02	6.62E+00	5.24E-18
Copper (29)	Cu-57	1.11E+08	6.22E-09	3.04E+01	2.45E+02	2.71E+01	2.69E-20
Copper (29)	Cu-59	2.68E+05	2.58E-06	5.92E+01	5.62E+02	5.36E+01	2.29E-17
Copper (29)	Cu-60	1.54E+04	4.51E-05	1.28E+03	2.00E+02	1.73E+02	1.31E-15

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Copper (29)	Cu-61	1.82E+03	3.80E-04	5.99E+02	1.01E+03	3.77E+02	2.45E-14
Copper (29)	Cu-62	3.77E+04	1.84E-05		8.15E+02	8.15E+02	2.61E-15
Copper (29)	Cu-64	4.78E+02	1.45E-03	3.97E+02	4.52E+03	3.65E+02	9.49E-14
Copper (29)	Cu-66	7.11E+04	9.74E-06		6.82E+03	6.82E+03	1.23E-14
Copper (29)	Cu-67	9.82E+01	7.06E-03	8.18E+01	7.64E+03	8.09E+01	1.07E-13
Copper (29)	Cu-69	1.28E+05	5.42E-06	1.68E+03	1.47E+03	7.84E+02	8.21E-16
Dysprosium (66)	Dy-148	1.10E+05	6.28E-06	8.15E-03	2.63E+02	8.15E-03	2.12E-20
Dysprosium (66)	Dy-149	8.67E+04	7.99E-06	1.01E+01	2.27E+02	9.69E+00	3.23E-17
Dysprosium (66)	Dy-150	5.08E+04	1.36E-05	1.78E-03	2.89E+02	1.78E-03	1.02E-20
Dysprosium (66)	Dy-151	2.03E+04	3.41E-05	3.94E-02	3.39E+02	3.94E-02	5.68E-19
Dysprosium (66)	Dy-152	2.55E+03	2.72E-04	8.84E-04	4.60E+02	8.84E-04	1.02E-19
Dysprosium (66)	Dy-153	9.49E+02	7.31E-04	1.76E+01	6.84E+02	1.72E+01	5.38E-15
Dysprosium (66)	Dy-154	2.31E-07	3.00E+06	1.40E-03		1.40E-03	1.82E-09
Dysprosium (66)	Dy-155	6.13E+02	1.13E-03	1.18E+02	1.04E+03	1.06E+02	5.19E-14
Dysprosium (66)	Dy-157	7.46E+02	9.29E-04	1.56E+01	2.59E+03	1.55E+01	6.35E-15
Dysprosium (66)	Dy-159	1.75E+00	3.96E-01	1.05E+02	3.75E+04	1.05E+02	1.85E-11
Dysprosium (66)	Dy-165	2.60E+03	2.66E-04	7.19E+02	2.70E+04	7.00E+02	8.62E-14
Dysprosium (66)	Dy-165m	2.90E+05	2.39E-06	7.35E+02	1.81E+04	7.07E+02	7.81E-16
Dysprosium (66)	Dy-166	7.44E+01	9.32E-03	1.67E+01	1.23E+04	1.67E+01	7.21E-14
Dysprosium (66)	Dy-167	5.87E+04	1.18E-05	5.93E+02	9.38E+02	3.63E+02	2.00E-15
Dysprosium (66)	Dy-168	4.19E+04	1.66E-05		6.48E+02	6.48E+02	5.04E-15
Erbium (68)	Er-154	9.77E+04	7.10E-06	1.41E-03	4.23E+02	1.41E-03	4.30E-21
Erbium (68)	Er-156	1.87E+04	3.71E-05	6.05E+02	3.77E+02	2.32E+02	3.76E-15
Erbium (68)	Er-159	1.01E+04	6.85E-05	9.98E+01	6.27E+02	8.61E+01	2.63E-15
Erbium (68)	Er-161	1.89E+03	3.66E-04	7.38E+02	8.17E+02	3.88E+02	6.40E-14
Erbium (68)	Er-163	4.86E+03	1.43E-04	1.91E+02	3.82E+04	1.90E+02	1.24E-14
Erbium (68)	Er-165	5.86E+02	1.18E-03	5.20E+03	4.16E+04	4.62E+03	2.52E-12
Erbium (68)	Er-167m	9.63E+06	7.19E-08		9.31E+03	9.31E+03	3.13E-16
Erbium (68)	Er-169	2.69E+01	2.58E-02	4.22E+01	1.27E+06	4.22E+01	5.15E-13
Erbium (68)	Er-171	8.08E+02	8.58E-04	3.26E+01	2.33E+03	3.21E+01	1.32E-14
Erbium (68)	Er-172	1.23E+02	5.63E-03	1.92E+01	8.28E+02	1.88E+01	5.10E-14
Erbium (68)	Er-173	2.54E+05	2.73E-06	2.40E+02	6.88E+02	1.78E+02	2.35E-16
Einsteinium (99)	Es-249	3.56E+03	1.94E-04	1.10E-04	6.22E+02	1.10E-04	1.49E-20
Einsteinium (99)	Es-250	7.06E+02	9.82E-04	1.47E-04	2.75E+02	1.47E-04	1.01E-19
Einsteinium (99)	Es-250m	2.73E+03	2.53E-04	1.44E-04	3.40E+02	1.44E-04	2.56E-20
Einsteinium (99)	Es-251	1.84E+02	3.77E-03	6.62E-05	6.21E+02	6.62E-05	1.75E-19
Einsteinium (99)	Es-253	1.24E+01	5.61E-02	1.08E-04	8.79E+02	1.08E-04	4.31E-18
Einsteinium (99)	Es-254	9.17E-01	7.55E-01	1.41E-04	2.95E+02	1.41E-04	7.59E-17
Einsteinium (99)	Es-254m	1.54E+02	4.49E-03	1.47E-04	3.53E+02	1.47E-04	4.68E-19
Einsteinium (99)	Es-255	6.36E+00	1.09E-01	6.58E-05	6.54E+02	6.58E-05	5.12E-18
Einsteinium (99)	Es-256	1.43E+04	4.83E-05	9.94E-04	6.02E+01	9.93E-04	3.44E-20
Europium (63)	Eu-142	9.34E+06	7.42E-08	6.09E+02	3.70E+02	2.30E+02	6.79E-18
Europium (63)	Eu-142m	2.98E+05	2.33E-06	6.09E+02	1.86E+02	1.43E+02	1.32E-16
Europium (63)	Eu-143	1.41E+05	4.93E-06	1.65E+01	4.18E+02	1.59E+01	3.14E-17
Europium (63)	Eu-144	2.14E+06	3.23E-07		7.24E+02	7.24E+02	9.44E-17
Europium (63)	Eu-145	4.27E+01	1.62E-02	4.31E+00	6.12E+02	4.28E+00	2.83E-14

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Europium (63)	Eu-146	5.49E+01	1.26E-02	2.02E-03	3.38E+02	2.02E-03	1.05E-17
Europium (63)	Eu-147	1.05E+01	6.60E-02	2.22E-03	1.85E+03	2.22E-03	6.02E-17
Europium (63)	Eu-148	4.64E+00	1.49E-01	1.32E-03	3.71E+02	1.32E-03	8.14E-17
Europium (63)	Eu-149	2.72E+00	2.55E-01	1.11E+02	1.85E+04	1.10E+02	1.17E-11
Europium (63)	Eu-150	1.88E-02	3.69E+01	4.03E-01	5.42E+02	4.03E-01	6.25E-12
Europium (63)	Eu-150m	4.74E+02	1.46E-03	1.88E-03	1.61E+04	1.88E-03	1.15E-18
Europium (63)	Eu-152	5.12E-02	1.35E+01	3.15E-03	6.97E+02	3.15E-03	1.81E-14
Europium (63)	Eu-152m	6.52E+02	1.06E-03	1.23E-03	2.74E+03	1.23E-03	5.55E-19
Europium (63)	Eu-152n	3.79E+03	1.83E-04	3.15E-03	6.65E+02	3.15E-03	2.45E-19
Europium (63)	Eu-154	8.06E-02	8.59E+00	4.70E-01	6.49E+02	4.70E-01	1.74E-12
Europium (63)	Eu-154m	7.92E+03	8.75E-05	4.70E-01	6.26E+02	4.70E-01	1.77E-17
Europium (63)	Eu-155	1.46E-01	4.76E+00	8.30E+00	1.73E+04	8.30E+00	1.71E-11
Europium (63)	Eu-156	1.67E+01	4.16E-02	1.23E+01	6.32E+02	1.20E+01	2.19E-13
Europium (63)	Eu-157	4.00E+02	1.73E-03	1.42E+02	3.05E+03	1.36E+02	1.04E-13
Europium (63)	Eu-158	7.94E+03	8.73E-05	9.26E+02	6.11E+02	3.68E+02	1.42E-14
Europium (63)	Eu-159	2.01E+04	3.44E-05	1.42E+02	2.41E+03	1.34E+02	2.06E-15
Fluorine (9)	F-17	3.39E+05	2.04E-06		8.15E+02	8.15E+02	7.94E-17
Fluorine (9)	F-18	3.32E+03	2.09E-04	8.14E+02	8.51E+02	4.16E+02	4.38E-15
Iron (26)	Fe-52	7.34E+02	9.45E-04	6.48E+01	2.52E+02	5.15E+01	7.09E-15
Iron (26)	Fe-53	4.28E+04	1.62E-05	1.48E+02	7.01E+02	1.22E+02	2.94E-16
Iron (26)	Fe-53m	1.44E+05	4.81E-06	1.48E+02	1.90E+02	8.32E+01	5.93E-17
Iron (26)	Fe-55	2.53E-01	2.74E+00	5.99E+01	5.61E+12	5.99E+01	2.52E-11
Iron (26)	Fe-59	5.68E+00	1.22E-01	1.21E+01	6.67E+02	1.19E+01	2.40E-13
Iron (26)	Fe-60	4.62E-07	1.50E+06	1.64E-01	3.15E+02	1.64E-01	4.13E-08
Iron (26)	Fe-61	6.09E+04	1.14E-05	9.08E+02	5.29E+02	3.34E+02	6.50E-16
Iron (26)	Fe-62	3.21E+05	2.16E-06		3.66E+02	3.66E+02	1.37E-16
Fermium (100)	Fm-251	1.15E+03	6.05E-04	6.64E-05	5.64E+02	6.64E-05	2.82E-20
Fermium (100)	Fm-252	2.39E+02	2.90E-03	2.22E-04	3.34E+02	2.22E-04	4.54E-19
Fermium (100)	Fm-253	8.43E+01	8.22E-03	1.08E-04	8.33E+02	1.08E-04	6.32E-19
Fermium (100)	Fm-254	1.87E+03	3.70E-04	1.45E-04	4.38E+02	1.45E-04	3.80E-20
Fermium (100)	Fm-255	3.02E+02	2.29E-03	6.62E-05	6.58E+02	6.62E-05	1.08E-19
Fermium (100)	Fm-256	2.31E+03	3.00E-04	9.94E-04	6.02E+01	9.94E-04	2.14E-19
Fermium (100)	Fm-257	2.52E+00	2.75E-01	1.06E-04	7.71E+02	1.06E-04	2.11E-17
Francium (87)	Fr-212	1.82E+04	3.81E-05	7.30E-03	3.32E+02	7.29E-03	1.65E-19
Francium (87)	Fr-219	1.09E+09	6.34E-10		1.39E+04	1.39E+04	5.41E-18
Francium (87)	Fr-220	7.98E+05	8.69E-07	3.28E+00	5.70E+02	3.27E+00	1.75E-18
Francium (87)	Fr-221	7.43E+04	9.32E-06	1.52E+00	3.98E+03	1.52E+00	8.76E-18
Francium (87)	Fr-222	2.57E+04	2.70E-05	4.97E-03	4.21E+03	4.97E-03	8.34E-20
Francium (87)	Fr-223	1.66E+04	4.19E-05	5.74E-03	2.31E+03	5.74E-03	1.50E-19
Francium (87)	Fr-224	1.09E+05	6.34E-06	1.44E-02	3.81E+02	1.44E-02	5.71E-20
Francium (87)	Fr-227	1.47E+05	4.70E-06	6.80E-04	8.22E+02	6.80E-04	2.03E-21
Gallium (31)	Ga-64	1.39E+05	5.00E-06		2.29E+02	2.29E+02	2.05E-16
Gallium (31)	Ga-65	2.40E+04	2.89E-05	2.09E+01	4.72E+02	2.01E+01	1.06E-16
Gallium (31)	Ga-66	6.40E+02	1.08E-03	9.48E+01	3.03E+02	7.22E+01	1.45E-14
Gallium (31)	Ga-67	7.76E+01	8.93E-03	1.80E+02	5.71E+03	1.74E+02	2.92E-13
Gallium (31)	Ga-68	5.38E+03	1.29E-04	8.80E+02	8.74E+02	4.39E+02	1.08E-14

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Gallium (31)	Ga-70	1.72E+04	4.02E-05	2.77E+03	4.54E+04	2.61E+03	2.06E-14
Gallium (31)	Ga-72	4.31E+02	1.61E-03	8.04E+01	2.86E+02	6.28E+01	2.04E-14
Gallium (31)	Ga-73	1.25E+03	5.55E-04	2.95E+02	2.40E+03	2.63E+02	2.98E-14
Gallium (31)	Ga-74	4.49E+04	1.54E-05		2.42E+02	2.42E+02	7.75E-16
Gadolinium (64)	Gd-142	3.11E+05	2.23E-06	6.09E+02	2.51E+02	1.78E+02	1.57E-16
Gadolinium (64)	Gd-143m	1.99E+05	3.49E-06	1.65E+01	2.00E+02	1.53E+01	2.13E-17
Gadolinium (64)	Gd-144	8.15E+04	8.50E-06		3.98E+02	3.98E+02	1.36E-15
Gadolinium (64)	Gd-145	1.58E+04	4.38E-05	4.31E+00	2.09E+02	4.22E+00	7.50E-17
Gadolinium (64)	Gd-145m	2.57E+05	2.70E-06	4.31E+00	1.84E+02	4.21E+00	4.61E-18
Gadolinium (64)	Gd-146	5.24E+00	1.32E-01	2.02E-03	3.13E+02	2.02E-03	1.09E-16
Gadolinium (64)	Gd-147	1.59E+02	4.35E-03	2.22E-03	4.51E+02	2.22E-03	3.97E-18
Gadolinium (64)	Gd-148	9.29E-03	7.46E+01	8.15E-03		8.15E-03	2.52E-13
Gadolinium (64)	Gd-149	2.73E+01	2.54E-02	3.51E+01	1.54E+03	3.44E+01	3.64E-13
Gadolinium (64)	Gd-150	3.87E-07	1.79E+06	1.67E-03		1.67E-03	1.26E-09
Gadolinium (64)	Gd-151	2.04E+00	3.40E-01	4.13E+01	1.74E+04	4.12E+01	5.91E-12
Gadolinium (64)	Gd-152	6.42E-15	1.08E+14	8.83E-04		8.83E-04	4.06E-02
Gadolinium (64)	Gd-153	1.05E+00	6.59E-01	2.04E+01	1.21E+04	2.04E+01	5.75E-12
Gadolinium (64)	Gd-159	3.29E+02	2.11E-03	1.54E+02	1.60E+04	1.53E+02	1.43E-13
Gadolinium (64)	Gd-162	4.34E+04	1.60E-05		5.44E+02	5.44E+02	3.94E-15
Germanium (32)	Ge-66	2.69E+03	2.58E-04	7.95E+01	2.44E+02	6.00E+01	2.86E-15
Germanium (32)	Ge-67	1.93E+04	3.60E-05	1.63E+02	5.21E+02	1.24E+02	8.39E-16
Germanium (32)	Ge-68	9.34E-01	7.42E-01	1.61E+00	8.74E+02	1.61E+00	2.27E-13
Germanium (32)	Ge-69	1.55E+02	4.46E-03	1.84E+02	8.56E+02	1.52E+02	1.31E-13
Germanium (32)	Ge-71	2.21E+01	3.13E-02	3.75E+03	4.17E+08	3.75E+03	2.34E-11
Germanium (32)	Ge-75	4.40E+03	1.57E-04	1.21E+03	2.05E+04	1.14E+03	3.77E-14
Germanium (32)	Ge-77	5.37E+02	1.29E-03	5.79E+01	7.50E+02	5.38E+01	1.50E-14
Germanium (32)	Ge-78	4.14E+03	1.67E-04	2.42E+02	5.00E+02	1.63E+02	5.97E-15
Hydrogen (1)	H-3	5.63E-02	1.23E+01	1.87E+02		1.87E+02	1.94E-11
Hafnium (72)	Hf-167	1.78E+05	3.90E-06	3.55E+01	3.08E+02	3.18E+01	5.80E-17
Hafnium (72)	Hf-169	1.12E+05	6.16E-06	1.26E+01	3.74E+02	1.22E+01	3.57E-17
Hafnium (72)	Hf-170	3.79E+02	1.83E-03	4.92E+01	2.62E+02	4.14E+01	3.60E-14
Hafnium (72)	Hf-172	3.71E-01	1.87E+00	1.86E+00	4.05E+02	1.86E+00	1.67E-12
Hafnium (72)	Hf-173	2.57E+02	2.69E-03	1.31E+01	1.65E+03	1.30E+01	1.69E-14
Hafnium (72)	Hf-174	3.47E-16	2.00E+15	1.02E-02		1.02E-02	9.94E+00
Hafnium (72)	Hf-175	3.61E+00	1.92E-01	3.49E+01	2.55E+03	3.44E+01	3.23E-12
Hafnium (72)	Hf-177m	7.09E+03	9.78E-05	4.87E+02	3.81E+02	2.14E+02	1.04E-14
Hafnium (72)	Hf-178m	2.24E-02	3.10E+01	2.35E-01	3.84E+02	2.35E-01	3.63E-12
Hafnium (72)	Hf-179m	1.01E+01	6.86E-02	1.10E+01	9.57E+02	1.09E+01	3.75E-13
Hafnium (72)	Hf-180m	1.10E+03	6.28E-04	3.24E+02	8.78E+02	2.37E+02	7.48E-14
Hafnium (72)	Hf-181	5.97E+00	1.16E-01	8.29E+00	1.62E+03	8.25E+00	4.85E-13
Hafnium (72)	Hf-182	7.70E-08	9.00E+06	1.71E-01	5.34E+02	1.71E-01	7.86E-07
Hafnium (72)	Hf-182m	5.92E+03	1.17E-04	3.88E-01	3.57E+02	3.88E-01	2.31E-17
Hafnium (72)	Hf-183	5.69E+03	1.22E-04	2.10E+01	7.98E+02	2.05E+01	1.28E-15
Hafnium (72)	Hf-184	1.47E+03	4.70E-04	5.89E+01	4.66E+02	5.23E+01	1.27E-14
Mercury (80)	Hg-190	1.82E+04	3.81E-05	5.36E-03	3.03E+02	5.36E-03	1.08E-19
Mercury (80)	Hg-191m	7.17E+03	9.67E-05	6.41E+01	3.59E+02	5.44E+01	2.81E-15

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Mercury (80)	Hg-192	1.25E+03	5.54E-04	4.52E+01	3.61E+02	4.02E+01	1.20E-14
Mercury (80)	Hg-193	1.60E+03	4.34E-04	3.01E+01	8.37E+02	2.91E+01	6.82E-15
Mercury (80)	Hg-193m	5.14E+02	1.35E-03	1.30E+01	5.93E+02	1.27E+01	9.24E-15
Mercury (80)	Hg-194	1.58E-03	4.40E+02	2.17E+00	7.80E+02	2.17E+00	5.18E-10
Mercury (80)	Hg-195	5.77E+02	1.20E-03	1.49E+01	3.43E+03	1.48E+01	9.73E-15
Mercury (80)	Hg-195m	1.46E+02	4.75E-03	4.63E+00	2.42E+03	4.62E+00	1.20E-14
Mercury (80)	Hg-197	9.35E+01	7.41E-03	1.07E+01	1.57E+04	1.07E+01	4.37E-14
Mercury (80)	Hg-197m	2.55E+02	2.72E-03	4.91E+00	6.32E+03	4.91E+00	7.36E-15
Mercury (80)	Hg-199m	8.54E+03	8.12E-05	2.83E+02	4.98E+03	2.68E+02	1.21E-14
Mercury (80)	Hg-203	5.43E+00	1.28E-01	7.01E+00	3.61E+03	7.00E+00	5.08E-13
Mercury (80)	Hg-205	7.00E+04	9.89E-06		6.06E+04	6.06E+04	3.44E-13
Mercury (80)	Hg-206	4.47E+04	1.55E-05		6.30E+03	6.30E+03	5.63E-14
Mercury (80)	Hg-207	1.26E+05	5.52E-06		2.92E+02	2.92E+02	9.34E-16
Holmium (67)	Ho-150	2.85E+05	2.44E-06	1.78E-03	1.73E+02	1.78E-03	1.82E-21
Holmium (67)	Ho-153	1.81E+05	3.82E-06	1.76E+01	3.72E+02	1.68E+01	2.76E-17
Holmium (67)	Ho-153m	3.92E+04	1.77E-05	1.76E+01	3.67E+02	1.68E+01	1.27E-16
Holmium (67)	Ho-154	3.10E+04	2.24E-05	1.40E-03	4.35E+02	1.40E-03	1.36E-20
Holmium (67)	Ho-154m	1.17E+05	5.90E-06	1.40E-03	3.44E+02	1.40E-03	3.57E-21
Holmium (67)	Ho-155	7.59E+03	9.13E-05	1.11E+02	5.95E+02	9.34E+01	3.70E-15
Holmium (67)	Ho-156	6.50E+03	1.07E-04	8.24E+02	3.84E+02	2.62E+02	1.22E-14
Holmium (67)	Ho-157	2.89E+04	2.40E-05	1.56E+01	9.59E+02	1.54E+01	1.62E-16
Holmium (67)	Ho-159	1.10E+04	6.29E-05	1.04E+02	2.32E+03	9.93E+01	2.78E-15
Holmium (67)	Ho-160	1.42E+04	4.87E-05	3.32E+03	4.91E+02	4.28E+02	9.33E-15
Holmium (67)	Ho-161	2.45E+03	2.83E-04	6.02E+03	2.82E+04	4.96E+03	6.33E-13
Holmium (67)	Ho-162	2.43E+04	2.85E-05	1.58E+04	5.74E+03	4.21E+03	5.44E-14
Holmium (67)	Ho-162m	5.44E+03	1.27E-04	1.99E+03	1.30E+03	7.86E+02	4.54E-14
Holmium (67)	Ho-163	1.52E-04	4.57E+03	1.92E+02		1.92E+02	4.00E-07
Holmium (67)	Ho-164	1.26E+04	5.52E-05	5.30E+03	4.67E+04	4.76E+03	1.21E-13
Holmium (67)	Ho-164m	9.59E+03	7.23E-05	2.28E+03	2.01E+04	2.05E+03	6.80E-14
Holmium (67)	Ho-166	2.27E+02	3.06E-03	6.42E+01	2.14E+04	6.40E+01	9.10E-14
Holmium (67)	Ho-166m	5.78E-04	1.20E+03	1.83E-01	5.15E+02	1.83E-01	1.02E-10
Holmium (67)	Ho-167	1.96E+03	3.54E-04	5.93E+02	2.34E+03	4.73E+02	7.83E-14
Holmium (67)	Ho-168	1.22E+05	5.69E-06		9.24E+02	9.24E+02	2.47E-15
Holmium (67)	Ho-168m	1.66E+05	4.19E-06		9.21E+02	9.21E+02	1.81E-15
Holmium (67)	Ho-170	1.32E+05	5.25E-06		4.79E+02	4.79E+02	1.20E-15
Iodine (53)	I-118	2.66E+04	2.61E-05	1.71E+01	2.88E+02	1.62E+01	1.39E-16
Iodine (53)	I-118m	4.29E+04	1.62E-05	1.83E+01	1.81E+02	1.66E+01	8.89E-17
Iodine (53)	I-119	1.91E+04	3.63E-05	2.23E+02	4.98E+02	1.54E+02	1.87E-15
Iodine (53)	I-120	4.46E+03	1.55E-04	1.67E+02	2.93E+02	1.06E+02	5.55E-15
Iodine (53)	I-120m	6.87E+03	1.01E-04	3.34E+02	2.30E+02	1.36E+02	4.61E-15
Iodine (53)	I-121	2.86E+03	2.42E-04	7.05E+01	8.93E+02	6.53E+01	5.36E-15
Iodine (53)	I-122	1.00E+05	6.91E-06		8.54E+02	8.54E+02	2.02E-15
Iodine (53)	I-123	4.57E+02	1.51E-03	1.28E+01	5.73E+03	1.28E+01	6.68E-15
Iodine (53)	I-124	6.06E+01	1.14E-02	3.44E+00	7.34E+02	3.43E+00	1.36E-14
Iodine (53)	I-125	4.26E+00	1.63E-01	3.28E+00	9.92E+04	3.28E+00	1.87E-13
Iodine (53)	I-126	1.96E+01	3.54E-02	1.57E+00	1.95E+03	1.57E+00	1.96E-14

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Iodine (53)	I-128	1.46E+04	4.75E-05	7.45E+02	1.06E+04	6.96E+02	1.19E-14
Iodine (53)	I-129	4.41E-08	1.57E+07	5.01E-01	1.31E+05	5.00E-01	2.84E-06
Iodine (53)	I-130	4.91E+02	1.41E-03	2.29E+01	3.88E+02	2.16E+01	1.11E-14
Iodine (53)	I-130m	4.12E+04	1.68E-05	2.73E+01	4.35E+02	2.57E+01	1.57E-16
Iodine (53)	I-131	3.15E+01	2.20E-02	2.07E+00	2.21E+03	2.07E+00	1.67E-14
Iodine (53)	I-132	2.65E+03	2.62E-04	1.40E+02	3.61E+02	1.01E+02	9.75E-15
Iodine (53)	I-132m	4.38E+03	1.58E-04	8.60E+01	3.59E+02	6.94E+01	4.06E-15
Iodine (53)	I-133	2.92E+02	2.37E-03	9.86E+00	1.28E+03	9.79E+00	8.66E-15
Iodine (53)	I-134	6.94E+03	9.99E-05	3.34E+02	3.10E+02	1.61E+02	6.02E-15
Iodine (53)	I-134m	1.01E+05	6.85E-06	3.42E+02	2.88E+02	1.56E+02	4.02E-16
Iodine (53)	I-135	9.24E+02	7.50E-04	3.96E+00	4.18E+02	3.92E+00	1.11E-15
Indium (49)	In-103	3.64E+05	1.90E-06	1.01E+02	1.40E+02	5.88E+01	3.22E-17
Indium (49)	In-105	7.18E+04	9.65E-06	5.66E+01	2.17E+02	4.49E+01	1.27E-16
Indium (49)	In-106	5.87E+04	1.18E-05		2.30E+02	2.30E+02	8.06E-16
Indium (49)	In-106m	7.00E+04	9.89E-06		2.78E+02	2.78E+02	8.16E-16
Indium (49)	In-107	1.12E+04	6.16E-05	4.43E+02	5.19E+02	2.39E+02	4.41E-15
Indium (49)	In-108	6.28E+03	1.10E-04	9.47E+02	2.07E+02	1.70E+02	5.67E-15
Indium (49)	In-108m	9.20E+03	7.53E-05	1.19E+03	2.78E+02	2.25E+02	5.14E-15
Indium (49)	In-109	1.45E+03	4.79E-04	7.78E+00	1.30E+03	7.73E+00	1.13E-15
Indium (49)	In-109m	2.72E+05	2.55E-06	7.78E+00	6.67E+02	7.69E+00	5.98E-18
Indium (49)	In-110	1.24E+03	5.59E-04	3.30E+02	2.66E+02	1.47E+02	2.54E-14
Indium (49)	In-110m	5.27E+03	1.31E-04	8.99E+02	5.17E+02	3.28E+02	1.33E-14
Indium (49)	In-111	9.02E+01	7.68E-03	1.88E+02	2.22E+03	1.74E+02	4.15E-13
Indium (49)	In-111m	4.73E+04	1.46E-05	1.88E+02	9.90E+02	1.58E+02	7.20E-16
Indium (49)	In-112	2.43E+04	2.85E-05	5.74E+03	3.15E+03	2.03E+03	1.82E-14
Indium (49)	In-112m	1.77E+04	3.91E-05	1.53E+03	2.91E+03	1.00E+03	1.23E-14
Indium (49)	In-113m	3.66E+03	1.89E-04	2.16E+03	3.32E+03	1.31E+03	7.84E-14
Indium (49)	In-114	3.04E+05	2.28E-06		5.16E+04	5.16E+04	3.76E-14
Indium (49)	In-114m	5.11E+00	1.36E-01	3.60E+00	9.46E+03	3.60E+00	1.56E-13
Indium (49)	In-115	1.57E-15	4.41E+14	1.32E-01	5.68E+05	1.32E-01	1.88E+01
Indium (49)	In-115m	1.35E+03	5.12E-04	1.39E-01	5.36E+03	1.39E-01	2.29E-17
Indium (49)	In-116m	6.69E+03	1.04E-04	9.57E+02	3.18E+02	2.39E+02	8.02E-15
Indium (49)	In-117	8.43E+03	8.22E-05	1.17E+03	1.22E+03	5.96E+02	1.61E-14
Indium (49)	In-117m	3.13E+03	2.21E-04	4.86E+02	2.02E+03	3.92E+02	2.84E-14
Indium (49)	In-118	4.37E+06	1.59E-07		6.56E+03	6.56E+03	3.44E-16
Indium (49)	In-118m	8.35E+04	8.30E-06		2.86E+02	2.86E+02	7.86E-16
Indium (49)	In-119	1.52E+05	4.57E-06	1.50E+03	1.06E+03	6.22E+02	9.46E-16
Indium (49)	In-119m	2.02E+04	3.42E-05	2.26E+03	6.39E+03	1.67E+03	1.91E-14
Indium (49)	In-121	9.46E+05	7.32E-07	2.60E+01	8.59E+02	2.52E+01	6.26E-18
Indium (49)	In-121m	9.39E+04	7.38E-06	1.77E+02	8.37E+03	1.73E+02	4.33E-16
Iridium (77)	Ir-180	2.43E+05	2.85E-06	3.05E+03	2.85E+02	2.61E+02	3.75E-16
Iridium (77)	Ir-182	2.43E+04	2.85E-05	7.15E+01	2.71E+02	5.66E+01	8.23E-16
Iridium (77)	Ir-183	6.28E+03	1.10E-04	1.29E+01	3.62E+02	1.24E+01	7.03E-16
Iridium (77)	Ir-184	1.96E+03	3.53E-04	3.63E+02	4.16E+02	1.94E+02	3.52E-14
Iridium (77)	Ir-185	4.22E+02	1.64E-03	2.69E+01	5.35E+02	2.57E+01	2.18E-14
Iridium (77)	Ir-186	3.65E+02	1.90E-03	1.20E-02	4.92E+02	1.20E-02	1.19E-17

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Iridium (77)	Ir-186m	3.16E+03	2.19E-04	1.20E-02	4.86E+02	1.20E-02	1.37E-18
Iridium (77)	Ir-187	5.78E+02	1.20E-03	5.94E+02	2.68E+03	4.86E+02	3.05E-13
Iridium (77)	Ir-188	1.46E+02	4.74E-03	9.47E+01	3.71E+02	7.54E+01	1.88E-13
Iridium (77)	Ir-189	1.92E+01	3.62E-02	8.63E+01	1.40E+04	8.58E+01	1.64E-12
Iridium (77)	Ir-190	2.15E+01	3.23E-02	3.47E+01	5.76E+02	3.27E+01	5.61E-13
Iridium (77)	Ir-190m	5.42E+03	1.28E-04	3.45E+01	5.76E+02	3.25E+01	2.21E-15
Iridium (77)	Ir-190n	1.97E+03	3.52E-04	2.32E+02	5.23E+02	1.60E+02	3.01E-14
Iridium (77)	Ir-191m	4.42E+06	1.57E-07		1.41E+04	1.41E+04	1.18E-15
Iridium (77)	Ir-192	3.43E+00	2.02E-01	7.40E+00	1.04E+03	7.35E+00	7.99E-13
Iridium (77)	Ir-192m	2.51E+05	2.76E-06	7.41E+00	1.04E+03	7.35E+00	1.09E-17
Iridium (77)	Ir-192n	2.88E-03	2.41E+02	7.89E-01	1.04E+03	7.89E-01	1.02E-10
Iridium (77)	Ir-193m	2.40E+01	2.88E-02	4.00E+01	3.61E+06	4.00E+01	6.24E-13
Iridium (77)	Ir-194	3.15E+02	2.20E-03	8.01E+01	7.86E+03	7.93E+01	9.48E-14
Iridium (77)	Ir-194m	1.48E+00	4.68E-01	4.06E+00	3.61E+02	4.02E+00	1.02E-12
Iridium (77)	Ir-195	2.43E+03	2.85E-04	6.50E+02	1.71E+04	6.26E+02	9.75E-14
Iridium (77)	Ir-195m	1.60E+03	4.34E-04	7.56E+01	2.15E+03	7.30E+01	1.73E-14
Iridium (77)	Ir-196	4.20E+05	1.65E-06		3.23E+03	3.23E+03	2.93E-15
Iridium (77)	Ir-196m	4.34E+03	1.60E-04	5.01E+02	3.41E+02	2.03E+02	1.78E-14
Potassium (19)	K-38	4.77E+04	1.45E-05		2.40E+02	2.40E+02	3.72E-16
Potassium (19)	K-40	5.54E-10	1.25E+09	6.09E-01	4.72E+03	6.09E-01	8.54E-05
Potassium (19)	K-42	4.91E+02	1.41E-03	1.32E+02	2.52E+03	1.26E+02	2.09E-14
Potassium (19)	K-43	2.72E+02	2.55E-03	1.25E+02	8.66E+02	1.09E+02	3.35E-14
Potassium (19)	K-44	1.65E+04	4.21E-05	1.35E+03	3.15E+02	2.56E+02	1.33E-15
Potassium (19)	K-45	2.11E+04	3.29E-05	1.35E+01	4.14E+02	1.30E+01	5.41E-17
Potassium (19)	K-46	2.08E+05	3.33E-06		2.55E+02	2.55E+02	1.09E-16
Krypton (36)	Kr-74	3.17E+04	2.19E-05	1.14E+03	1.35E+02	1.21E+02	5.49E-16
Krypton (36)	Kr-75	8.49E+04	8.16E-06	3.54E+01	2.91E+02	3.16E+01	5.41E-17
Krypton (36)	Kr-76	4.10E+02	1.69E-03	1.06E+02	2.46E+02	7.42E+01	2.67E-14
Krypton (36)	Kr-77	4.90E+03	1.42E-04	5.05E+02	6.21E+02	2.79E+02	8.50E-15
Krypton (36)	Kr-79	1.73E+02	4.00E-03		3.38E+03	3.38E+03	2.99E-12
Krypton (36)	Kr-81	3.03E-06	2.29E+05		9.82E+05	9.82E+05	5.10E-02
Krypton (36)	Kr-81m	1.67E+06	4.15E-07		6.69E+03	6.69E+03	6.30E-16
Krypton (36)	Kr-83m	3.32E+03	2.09E-04		3.41E+07	3.41E+07	1.66E-09
Krypton (36)	Kr-85	6.44E-02	1.08E+01		1.56E+05	1.56E+05	3.98E-07
Krypton (36)	Kr-85m	1.36E+03	5.11E-04		5.44E+03	5.44E+03	6.62E-13
Krypton (36)	Kr-87	4.77E+03	1.45E-04	3.22E+00	9.44E+02	3.21E+00	1.13E-16
Krypton (36)	Kr-88	2.14E+03	3.24E-04	1.62E+03	2.87E+02	2.44E+02	1.95E-14
Krypton (36)	Kr-89	1.16E+05	5.99E-06	6.10E+00	1.83E+02	5.91E+00	8.82E-18
Lanthanum (57)	La-128	7.03E+04	9.86E-06	3.28E+01	2.17E+02	2.85E+01	1.01E-16
Lanthanum (57)	La-129	3.14E+04	2.21E-05	3.74E+02	5.28E+02	2.19E+02	1.75E-15
Lanthanum (57)	La-130	4.19E+04	1.66E-05		3.64E+02	3.64E+02	2.19E-15
Lanthanum (57)	La-131	6.17E+03	1.12E-04	5.21E+01	7.65E+02	4.88E+01	2.01E-15
Lanthanum (57)	La-132	1.26E+03	5.48E-04	2.47E+02	4.02E+02	1.53E+02	3.10E-14
Lanthanum (57)	La-132m	1.50E+04	4.62E-05	2.82E+02	3.73E+02	1.61E+02	2.75E-15
Lanthanum (57)	La-133	1.55E+03	4.47E-04	4.82E+00	1.66E+03	4.80E+00	7.99E-16
Lanthanum (57)	La-134	5.65E+04	1.23E-05		1.15E+03	1.15E+03	5.30E-15

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Lanthanum (57)	La-135	3.11E+02	2.23E-03	2.94E+03	4.85E+04	2.77E+03	2.33E-12
Lanthanum (57)	La-136	3.69E+04	1.88E-05		2.10E+03	2.10E+03	1.50E-14
Lanthanum (57)	La-137	1.16E-05	6.00E+04	5.73E+00	1.22E+05	5.73E+00	1.32E-07
Lanthanum (57)	La-138	6.79E-12	1.02E+11	3.34E-01	6.45E+02	3.33E-01	1.31E-02
Lanthanum (57)	La-140	1.51E+02	4.60E-03	4.00E+01	3.38E+02	3.58E+01	6.45E-14
Lanthanum (57)	La-141	1.55E+03	4.47E-04	1.25E+01	7.12E+03	1.25E+01	2.21E-15
Lanthanum (57)	La-142	4.00E+03	1.73E-04	5.05E+02	3.15E+02	1.94E+02	1.34E-14
Lanthanum (57)	La-143	2.57E+04	2.70E-05	1.46E+01	1.44E+03	1.44E+01	1.56E-16
Lutetium (71)	Lu-165	3.39E+04	2.04E-05	1.80E+02	4.22E+02	1.26E+02	1.19E-15
Lutetium (71)	Lu-167	7.07E+03	9.80E-05	3.55E+01	3.97E+02	3.26E+01	1.49E-15
Lutetium (71)	Lu-169	1.78E+02	3.89E-03	1.26E+01	5.17E+02	1.23E+01	2.27E-14
Lutetium (71)	Lu-169m	1.37E+05	5.07E-06	1.26E+01	5.17E+02	1.23E+01	2.96E-17
Lutetium (71)	Lu-170	1.26E+02	5.51E-03	7.14E+01	3.00E+02	5.77E+01	1.51E-13
Lutetium (71)	Lu-171	3.07E+01	2.26E-02	4.87E+01	1.34E+03	4.70E+01	5.08E-13
Lutetium (71)	Lu-171m	2.77E+05	2.51E-06	4.87E+01	1.34E+03	4.70E+01	5.64E-17
Lutetium (71)	Lu-172	3.78E+01	1.84E-02	3.00E+01	4.19E+02	2.80E+01	2.48E-13
Lutetium (71)	Lu-172m	9.84E+04	7.04E-06	3.00E+01	4.19E+02	2.80E+01	9.50E-17
Lutetium (71)	Lu-173	5.06E-01	1.37E+00	1.38E+01	5.80E+03	1.37E+01	9.11E-12
Lutetium (71)	Lu-174	2.09E-01	3.31E+00	1.09E+01	8.41E+03	1.09E+01	1.76E-11
Lutetium (71)	Lu-174m	1.78E+00	3.89E-01	5.53E+00	6.04E+03	5.53E+00	1.05E-12
Lutetium (71)	Lu-176	1.80E-11	3.85E+10	3.36E-01	1.81E+03	3.36E-01	6.37E-03
Lutetium (71)	Lu-176m	1.67E+03	4.15E-04	4.10E+02	4.87E+04	4.06E+02	8.30E-14
Lutetium (71)	Lu-177	3.81E+01	1.82E-02	4.10E+01	2.50E+04	4.09E+01	3.69E-13
Lutetium (71)	Lu-177m	1.58E+00	4.39E-01	3.02E+00	8.80E+02	3.01E+00	6.56E-13
Lutetium (71)	Lu-178	1.28E+04	5.40E-05	1.83E+03	5.82E+03	1.39E+03	3.75E-14
Lutetium (71)	Lu-178m	1.58E+04	4.39E-05	1.46E+03	8.28E+02	5.28E+02	1.16E-14
Lutetium (71)	Lu-179	1.32E+03	5.24E-04	4.16E+02	2.30E+04	4.08E+02	1.07E-13
Lutetium (71)	Lu-180	6.39E+04	1.08E-05		5.29E+02	5.29E+02	2.89E-15
Lutetium (71)	Lu-181	1.04E+05	6.66E-06	8.29E+00	7.66E+02	8.20E+00	2.77E-17
Magnesium (12)	Mg-27	3.85E+04	1.80E-05		9.02E+02	9.02E+02	1.23E-15
Magnesium (12)	Mg-28	2.90E+02	2.39E-03	3.60E+01	2.46E+02	3.14E+01	5.88E-15
Manganese (25)	Mn-50m	2.08E+05	3.33E-06		1.72E+02	1.72E+02	8.02E-17
Manganese (25)	Mn-51	7.88E+03	8.79E-05	5.68E+02	8.05E+02	3.33E+02	4.18E-15
Manganese (25)	Mn-52	4.52E+01	1.53E-02	3.26E+01	2.32E+02	2.85E+01	6.37E-14
Manganese (25)	Mn-52m	1.73E+04	4.01E-05	8.37E+02	3.24E+02	2.34E+02	1.36E-15
Manganese (25)	Mn-53	1.87E-07	3.70E+06	1.48E+02		1.48E+02	8.13E-05
Manganese (25)	Mn-54	8.10E-01	8.55E-01	1.50E+01	9.79E+02	1.48E+01	1.91E-12
Manganese (25)	Mn-56	2.35E+03	2.94E-04	3.51E+02	4.59E+02	1.99E+02	9.18E-15
Manganese (25)	Mn-57	2.56E+05	2.71E-06		7.08E+03	7.08E+03	3.06E-15
Manganese (25)	Mn-58m	3.35E+05	2.07E-06		3.26E+02	3.26E+02	1.10E-16
Molybdenum (42)	Mo-101	2.49E+04	2.78E-05	1.19E+03	4.42E+02	3.22E+02	2.53E-15
Molybdenum (42)	Mo-102	3.22E+04	2.15E-05	1.80E+03	5.46E+03	1.35E+03	8.32E-15
Molybdenum (42)	Mo-89	1.73E+05	4.01E-06	6.84E+01	2.14E+02	5.18E+01	5.18E-17
Molybdenum (42)	Mo-90	1.09E+03	6.35E-04	4.42E+01	1.55E+02	3.44E+01	5.50E-15
Molybdenum (42)	Mo-91	2.35E+04	2.95E-05	2.71E+01	8.32E+02	2.62E+01	1.97E-16
Molybdenum (42)	Mo-91m	3.38E+05	2.05E-06	1.28E+01	4.28E+02	1.24E+01	6.47E-18

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Molybdenum (42)	Mo-93	1.73E-04	4.00E+03	1.29E+01	1.91E+06	1.29E+01	1.34E-08
Molybdenum (42)	Mo-93m	8.86E+02	7.82E-04	1.23E+01	3.44E+02	1.18E+01	2.41E-15
Molybdenum (42)	Mo-99	9.21E+01	7.53E-03	3.52E+00	3.24E+03	3.52E+00	7.34E-15
Nitrogen (7)	N-13	3.66E+04	1.90E-05		8.21E+02	8.21E+02	5.66E-16
Nitrogen (7)	N-16	3.07E+06	2.26E-07		1.45E+02	1.45E+02	1.47E-18
Sodium (11)	Na-22	2.66E-01	2.60E+00	1.72E+00	3.68E+02	1.71E+00	2.74E-13
Sodium (11)	Na-24	4.06E+02	1.71E-03	9.27E+01	1.80E+02	6.12E+01	7.03E-15
Niobium (41)	Nb-87	9.71E+04	7.13E-06	6.72E+01	2.60E+02	5.34E+01	9.28E-17
Niobium (41)	Nb-88	2.51E+04	2.76E-05	4.95E+00	1.10E+02	4.74E+00	3.22E-17
Niobium (41)	Nb-88m	4.68E+04	1.48E-05	4.97E+00	1.11E+02	4.76E+00	1.73E-17
Niobium (41)	Nb-89	2.99E+03	2.32E-04	6.84E+01	3.17E+02	5.62E+01	3.25E-15
Niobium (41)	Nb-89m	5.52E+03	1.26E-04	7.83E+01	2.73E+02	6.09E+01	1.90E-15
Niobium (41)	Nb-90	4.16E+02	1.67E-03	6.80E+01	1.83E+02	4.96E+01	2.08E-14
Niobium (41)	Nb-91	1.02E-03	6.80E+02	2.74E+01	4.44E+05	2.74E+01	4.75E-09
Niobium (41)	Nb-91m	4.16E+00	1.67E-01	8.35E+00	2.93E+04	8.35E+00	3.55E-13
Niobium (41)	Nb-92	2.00E-08	3.47E+07	1.90E+00	5.49E+02	1.90E+00	1.70E-05
Niobium (41)	Nb-92m	2.49E+01	2.78E-02	1.04E+02	8.45E+02	9.27E+01	6.64E-13
Niobium (41)	Nb-93m	4.30E-02	1.61E+01	2.59E+01	1.23E+07	2.59E+01	1.09E-10
Niobium (41)	Nb-94	3.41E-05	2.03E+04	1.06E+00	5.26E+02	1.06E+00	5.64E-09
Niobium (41)	Nb-94m	5.82E+04	1.19E-05	1.06E+00	5.27E+02	1.06E+00	3.33E-18
Niobium (41)	Nb-95	7.23E+00	9.59E-02	2.80E+01	1.07E+03	2.73E+01	6.96E-13
Niobium (41)	Nb-95m	7.01E+01	9.89E-03	1.92E+01	1.05E+03	1.88E+01	4.95E-14
Niobium (41)	Nb-96	2.60E+02	2.67E-03	6.88E+01	3.32E+02	5.70E+01	4.08E-14
Niobium (41)	Nb-97	5.05E+03	1.37E-04	1.01E+03	1.23E+03	5.57E+02	2.07E-14
Niobium (41)	Nb-98m	7.10E+03	9.76E-05	7.66E+02	2.84E+02	2.07E+02	5.55E-15
Niobium (41)	Nb-99	1.46E+06	4.76E-07	3.52E+00	1.89E+03	3.51E+00	4.63E-19
Niobium (41)	Nb-99m	1.40E+05	4.95E-06	3.52E+00	7.45E+02	3.50E+00	4.80E-18
Neodymium (60)	Nd-134	4.29E+04	1.62E-05	3.09E+01	2.28E+02	2.72E+01	1.65E-16
Neodymium (60)	Nd-135	2.94E+04	2.36E-05	2.23E+02	2.84E+02	1.25E+02	1.11E-15
Neodymium (60)	Nd-136	7.19E+03	9.64E-05	6.71E+02	3.39E+02	2.25E+02	8.27E-15
Neodymium (60)	Nd-137	9.46E+03	7.32E-05	5.69E+00	5.31E+02	5.63E+00	1.58E-16
Neodymium (60)	Nd-138	1.20E+03	5.75E-04	1.78E+02	9.77E+02	1.51E+02	3.35E-14
Neodymium (60)	Nd-139	1.23E+04	5.65E-05	2.49E+01	1.23E+03	2.44E+01	5.38E-16
Neodymium (60)	Nd-139m	1.10E+03	6.28E-04	2.31E+01	4.40E+02	2.20E+01	5.37E-15
Neodymium (60)	Nd-140	7.51E+01	9.23E-03	4.06E+01	1.51E+03	3.96E+01	1.43E-13
Neodymium (60)	Nd-141	2.44E+03	2.84E-04	8.47E+03	1.42E+04	5.31E+03	5.96E-13
Neodymium (60)	Nd-141m	3.52E+05	1.97E-06	8.48E+03	1.10E+03	9.70E+02	7.53E-16
Neodymium (60)	Nd-144	3.03E-16	2.29E+15	2.69E-03		2.69E-03	2.48E+00
Neodymium (60)	Nd-147	2.30E+01	3.01E-02	2.21E-03	6.53E+03	2.21E-03	2.74E-17
Neodymium (60)	Nd-149	3.51E+03	1.97E-04	5.73E+01	2.20E+03	5.58E+01	4.59E-15
Neodymium (60)	Nd-151	2.93E+04	2.37E-05	5.19E+00	6.99E+02	5.15E+00	5.16E-17
Neodymium (60)	Nd-152	3.20E+04	2.17E-05	1.93E+03	1.72E+03	9.10E+02	8.40E-15
Neon (10)	Ne-19	1.27E+06	5.46E-07		8.10E+02	8.10E+02	2.35E-17
Neon (10)	Ne-24	1.08E+05	6.43E-06	9.27E+01	1.61E+02	5.89E+01	2.54E-17
Nickel (28)	Ni-56	4.16E+01	1.66E-02	6.11E+00	1.48E+02	5.87E+00	1.53E-14
Nickel (28)	Ni-57	1.71E+02	4.06E-03	3.04E+01	3.87E+02	2.82E+01	1.83E-14

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Nickel (28)	Ni-59	6.86E-06	1.01E+05	5.92E+01	5.42E+07	5.92E+01	9.88E-07
Nickel (28)	Ni-63	6.92E-03	1.00E+02	2.42E+01		2.42E+01	4.28E-10
Nickel (28)	Ni-65	2.41E+03	2.87E-04	1.33E+02	1.38E+03	1.22E+02	6.36E-15
Nickel (28)	Ni-66	1.11E+02	6.23E-03	2.53E+01	6.80E+03	2.52E+01	2.90E-14
Neptunium (93)	Np-232	2.48E+04	2.80E-05	6.27E-04	2.98E+02	6.27E-04	1.14E-20
Neptunium (93)	Np-233	1.01E+04	6.89E-05	5.23E-04	2.21E+03	5.23E-04	2.35E-20
Neptunium (93)	Np-234	5.75E+01	1.21E-02	4.00E-04	2.77E+02	4.00E-04	3.16E-18
Neptunium (93)	Np-235	6.39E-01	1.09E+00	1.66E-04	1.34E+03	1.66E-04	1.19E-16
Neptunium (93)	Np-236	4.50E-06	1.54E+05	4.89E-04	3.32E+02	4.89E-04	4.98E-11
Neptunium (93)	Np-236m	2.70E+02	2.57E-03	5.49E-04	3.95E+02	5.49E-04	9.32E-19
Neptunium (93)	Np-237	3.23E-07	2.14E+06	4.66E-04	1.58E+03	4.66E-04	6.63E-10
Neptunium (93)	Np-238	1.19E+02	5.80E-03	2.20E-04	3.41E+02	2.20E-04	8.52E-19
Neptunium (93)	Np-239	1.07E+02	6.46E-03	1.21E-04	1.06E+03	1.21E-04	5.23E-19
Neptunium (93)	Np-240	5.88E+03	1.18E-04	2.45E-04	2.35E+02	2.45E-04	1.94E-20
Neptunium (93)	Np-240m	5.04E+04	1.37E-05	2.45E-04	2.95E+02	2.45E-04	2.26E-21
Neptunium (93)	Np-241	2.62E+04	2.64E-05	2.50E-04	1.43E+03	2.50E-04	4.46E-21
Neptunium (93)	Np-242	1.66E+05	4.19E-06	2.09E-04	3.83E+02	2.09E-04	5.92E-22
Neptunium (93)	Np-242m	6.62E+04	1.05E-05	2.09E-04	2.97E+02	2.09E-04	1.48E-21
Oxygen (8)	O-14	3.10E+05	2.24E-06		2.30E+02	2.30E+02	2.02E-17
Oxygen (8)	O-15	1.79E+05	3.88E-06		8.15E+02	8.15E+02	1.33E-16
Oxygen (8)	O-19	8.26E+05	8.39E-07		8.15E+02	8.15E+02	3.64E-17
Osmium (76)	Os-180	1.69E+04	4.09E-05	3.05E+03	6.35E+02	5.26E+02	1.08E-14
Osmium (76)	Os-181	3.47E+03	2.00E-04	7.57E+01	3.77E+02	6.30E+01	6.38E-15
Osmium (76)	Os-182	2.75E+02	2.52E-03	7.46E+01	5.06E+02	6.50E+01	8.35E-14
Osmium (76)	Os-183	4.67E+02	1.48E-03	1.30E+01	1.17E+03	1.29E+01	9.77E-15
Osmium (76)	Os-183m	6.13E+02	1.13E-03	1.30E+01	6.72E+02	1.28E+01	7.40E-15
Osmium (76)	Os-185	2.70E+00	2.56E-01	3.12E+01	1.23E+03	3.05E+01	4.05E-12
Osmium (76)	Os-186	3.47E-16	2.00E+15	1.20E-02		1.20E-02	1.25E+01
Osmium (76)	Os-189m	1.05E+03	6.62E-04	8.42E+03	3.64E+08	8.42E+03	2.95E-12
Osmium (76)	Os-190m	3.68E+04	1.88E-05		5.33E+02	5.33E+02	5.34E-15
Osmium (76)	Os-191	1.64E+01	4.22E-02	2.45E+01	1.27E+04	2.44E+01	5.51E-13
Osmium (76)	Os-191m	4.63E+02	1.50E-03	2.26E+01	1.20E+04	2.25E+01	1.80E-14
Osmium (76)	Os-193	2.02E+02	3.44E-03	8.49E+01	1.24E+04	8.43E+01	1.57E-13
Osmium (76)	Os-194	1.16E-01	6.00E+00	5.90E-01	7.78E+03	5.90E-01	1.92E-12
Osmium (76)	Os-196	1.04E+04	6.64E-05	8.14E+02	2.46E+03	6.12E+02	2.23E-14
Phosphorus (15)	P-30	1.46E+05	4.75E-06		8.00E+02	8.00E+02	3.19E-16
Phosphorus (15)	P-32	1.77E+01	3.91E-02	1.23E+01	7.00E+04	1.23E+01	4.32E-14
Phosphorus (15)	P-33	9.98E+00	6.94E-02	2.76E+01	2.60E+06	2.76E+01	1.77E-13
Protactinium (91)	Pa-227	9.51E+03	7.29E-05	1.70E-02	5.77E+03	1.70E-02	7.88E-19
Protactinium (91)	Pa-228	2.76E+02	2.51E-03	1.16E-03	2.79E+02	1.16E-03	1.87E-18
Protactinium (91)	Pa-229	1.69E+02	4.11E-03	5.83E-04	2.36E+03	5.83E-04	1.54E-18
Protactinium (91)	Pa-230	1.45E+01	4.77E-02	4.59E-04	3.54E+02	4.59E-04	1.41E-17
Protactinium (91)	Pa-231	2.12E-05	3.28E+04	1.71E-04	1.81E+03	1.71E-04	3.62E-12
Protactinium (91)	Pa-232	1.93E+02	3.59E-03	6.27E-04	3.27E+02	6.27E-04	1.46E-18
Protactinium (91)	Pa-233	9.38E+00	7.39E-02	5.23E-04	1.64E+03	5.23E-04	2.52E-17
Protactinium (91)	Pa-234	9.06E+02	7.65E-04	4.00E-04	2.51E+02	4.00E-04	2.00E-19

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Protactinium (91)	Pa-234m	3.11E+05	2.23E-06	4.00E-04	4.44E+02	4.00E-04	5.83E-22
Protactinium (91)	Pa-235	1.49E+04	4.66E-05	1.66E-04	1.32E+03	1.66E-04	5.09E-21
Protactinium (91)	Pa-236	4.00E+04	1.73E-05	5.44E-04	2.41E+02	5.44E-04	6.23E-21
Protactinium (91)	Pa-237	4.19E+04	1.66E-05	4.66E-04	6.56E+02	4.66E-04	5.12E-21
Lead (82)	Pb-194	3.04E+04	2.28E-05	2.17E+00	2.71E+02	2.15E+00	2.67E-17
Lead (82)	Pb-195m	2.43E+04	2.85E-05	1.46E+01	2.64E+02	1.38E+01	2.15E-16
Lead (82)	Pb-196	9.84E+03	7.04E-05	7.03E+02	3.44E+02	2.31E+02	8.93E-15
Lead (82)	Pb-197	4.55E+04	1.52E-05	1.06E+01	3.99E+02	1.03E+01	8.66E-17
Lead (82)	Pb-197m	8.47E+03	8.18E-05	1.05E+01	4.25E+02	1.02E+01	4.61E-16
Lead (82)	Pb-198	2.53E+03	2.74E-04	3.22E+02	3.30E+02	1.63E+02	2.48E-14
Lead (82)	Pb-199	4.05E+03	1.71E-04	5.73E+02	6.45E+02	3.03E+02	2.89E-14
Lead (82)	Pb-200	2.82E+02	2.45E-03	8.73E+01	5.52E+02	7.54E+01	1.04E-13
Lead (82)	Pb-201	6.51E+02	1.07E-03	1.49E+02	1.02E+03	1.30E+02	7.81E-14
Lead (82)	Pb-201m	3.58E+05	1.93E-06	1.49E+02	7.08E+02	1.23E+02	1.34E-16
Lead (82)	Pb-202	1.32E-05	5.25E+04	1.01E+00	1.90E+03	1.01E+00	3.01E-08
Lead (82)	Pb-202m	1.72E+03	4.03E-04	1.12E+00	3.40E+02	1.11E+00	2.53E-16
Lead (82)	Pb-203	1.17E+02	5.92E-03	2.10E+02	2.86E+03	1.95E+02	6.57E-13
Lead (82)	Pb-204m	5.42E+03	1.28E-04	1.53E+03	3.97E+02	3.15E+02	2.30E-14
Lead (82)	Pb-205	4.53E-08	1.53E+07	6.09E+01	7.62E+07	6.09E+01	5.35E-04
Lead (82)	Pb-209	1.87E+03	3.71E-04	7.74E+02	3.75E+05	7.73E+02	1.68E-13
Lead (82)	Pb-210	3.12E-02	2.22E+01	4.98E-03	1.23E+05	4.98E-03	6.50E-14
Lead (82)	Pb-211	1.01E+04	6.87E-05	3.97E+00	6.52E+03	3.97E+00	1.61E-16
Lead (82)	Pb-212	5.71E+02	1.21E-03	4.44E-01	5.23E+02	4.44E-01	3.20E-16
Lead (82)	Pb-214	1.36E+04	5.10E-05	4.97E-03	4.54E+02	4.97E-03	1.52E-19
Palladium (46)	Pd-100	6.97E+01	9.95E-03	4.00E+01	2.77E+02	3.49E+01	9.72E-14
Palladium (46)	Pd-101	7.17E+02	9.67E-04	7.94E+01	1.36E+03	7.50E+01	2.05E-14
Palladium (46)	Pd-103	1.49E+01	4.66E-02	1.07E+02	6.41E+05	1.07E+02	1.44E-12
Palladium (46)	Pd-107	1.07E-07	6.50E+06	8.20E+01		8.20E+01	1.60E-04
Palladium (46)	Pd-109	4.43E+02	1.56E-03	1.23E+02	8.93E+04	1.23E+02	5.86E-14
Palladium (46)	Pd-109m	7.77E+04	8.92E-06	1.23E+02	7.49E+03	1.21E+02	3.29E-16
Palladium (46)	Pd-111	1.56E+04	4.45E-05	2.76E+01	8.45E+03	2.75E+01	3.81E-16
Palladium (46)	Pd-112	2.89E+02	2.40E-03	3.53E+01	1.11E+03	3.42E+01	2.58E-14
Palladium (46)	Pd-114	1.51E+05	4.60E-06		2.33E+03	2.33E+03	3.43E-15
Palladium (46)	Pd-96	1.79E+05	3.87E-06		1.60E+02	1.60E+02	1.67E-16
Palladium (46)	Pd-97	1.17E+05	5.90E-06	2.61E+01	1.99E+02	2.31E+01	3.70E-17
Palladium (46)	Pd-98	2.06E+04	3.37E-05	1.61E+03	3.71E+02	3.02E+02	2.79E-15
Palladium (46)	Pd-99	1.70E+04	4.07E-05	4.60E+02	4.28E+02	2.22E+02	2.50E-15
Promethium (61)	Pm-136	2.04E+05	3.39E-06	6.71E+02	1.59E+02	1.29E+02	1.66E-16
Promethium (61)	Pm-137m	1.52E+05	4.57E-06	5.69E+00	2.49E+02	5.56E+00	9.74E-18
Promethium (61)	Pm-139	8.78E+04	7.90E-06	2.49E+01	5.11E+02	2.38E+01	7.31E-17
Promethium (61)	Pm-140	2.38E+06	2.92E-07	4.06E+01	5.06E+02	3.76E+01	4.30E-18
Promethium (61)	Pm-140m	6.12E+04	1.13E-05	4.06E+01	2.29E+02	3.45E+01	1.53E-16
Promethium (61)	Pm-141	1.74E+04	3.98E-05	2.28E+03	1.04E+03	7.13E+02	1.12E-14
Promethium (61)	Pm-142	5.40E+05	1.28E-06		9.50E+02	9.50E+02	4.85E-16
Promethium (61)	Pm-143	9.55E-01	7.26E-01	1.65E+01	2.78E+03	1.64E+01	4.78E-12
Promethium (61)	Pm-144	6.97E-01	9.95E-01	2.69E-03	5.40E+02	2.69E-03	1.08E-15

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Promethium (61)	Pm-145	3.92E-02	1.77E+01	6.27E+00	6.82E+04	6.27E+00	4.51E-11
Promethium (61)	Pm-146	1.25E-01	5.53E+00	5.92E-03	1.13E+03	5.92E-03	1.34E-14
Promethium (61)	Pm-147	2.64E-01	2.62E+00	2.21E-03	4.33E+06	2.21E-03	2.39E-15
Promethium (61)	Pm-148	4.71E+01	1.47E-02	1.32E-03	1.36E+03	1.32E-03	8.01E-18
Promethium (61)	Pm-148m	6.13E+00	1.13E-01	1.31E-03	4.12E+02	1.31E-03	6.16E-17
Promethium (61)	Pm-149	1.14E+02	6.06E-03	6.45E+01	4.94E+04	6.44E+01	1.63E-13
Promethium (61)	Pm-150	2.27E+03	3.06E-04	3.47E+02	5.38E+02	2.11E+02	2.71E-14
Promethium (61)	Pm-151	2.14E+02	3.24E-03	5.20E+00	2.60E+03	5.19E+00	7.11E-15
Promethium (61)	Pm-152	8.84E+04	7.84E-06		2.59E+03	2.59E+03	8.63E-15
Promethium (61)	Pm-152m	4.84E+04	1.43E-05		5.31E+02	5.31E+02	3.23E-15
Promethium (61)	Pm-153	6.94E+04	9.99E-06	6.84E+01	6.80E+03	6.77E+01	2.90E-16
Promethium (61)	Pm-154	2.11E+05	3.29E-06		4.30E+02	4.30E+02	6.10E-16
Promethium (61)	Pm-154m	1.36E+05	5.10E-06		4.41E+02	4.41E+02	9.70E-16
Polonium (84)	Po-203	9.92E+03	6.98E-05	8.27E+01	1.86E+02	5.73E+01	2.27E-15
Polonium (84)	Po-204	1.72E+03	4.03E-04	6.38E+01	1.92E+02	4.79E+01	1.10E-14
Polonium (84)	Po-205	3.66E+03	1.89E-04	2.49E+01	2.45E+02	2.26E+01	2.46E-15
Polonium (84)	Po-206	2.87E+01	2.41E-02	7.13E-01	1.90E+02	7.10E-01	9.87E-15
Polonium (84)	Po-207	1.05E+03	6.62E-04	1.32E+00	2.91E+02	1.32E+00	5.05E-16
Polonium (84)	Po-208	2.39E-01	2.90E+00	7.28E-03	9.51E+06	7.28E-03	1.23E-14
Polonium (84)	Po-209	6.79E-03	1.02E+02	5.30E-03	1.36E+05	5.30E-03	3.16E-13
Polonium (84)	Po-210	1.83E+00	3.79E-01	1.16E-02	8.43E+07	1.16E-02	2.57E-15
Polonium (84)	Po-211	4.24E+07	1.64E-08		1.01E+05	1.01E+05	9.72E-16
Polonium (84)	Po-212	7.31E+13	9.48E-15				
Polonium (84)	Po-212m	4.85E+05	1.43E-06		9.40E+03	9.40E+03	7.98E-15
Polonium (84)	Po-213	5.20E+12	1.33E-13	7.74E+02	3.69E+05	7.73E+02	6.14E-23
Polonium (84)	Po-214	1.33E+11	5.21E-12	4.98E-03	1.21E+05	4.98E-03	1.55E-26
Polonium (84)	Po-215	1.23E+10	5.65E-11	3.97E+00	6.51E+03	3.97E+00	1.35E-22
Polonium (84)	Po-216	1.51E+08	4.60E-09	4.44E-01	5.23E+02	4.44E-01	1.23E-21
Polonium (84)	Po-218	1.17E+05	5.90E-06	4.97E-03	4.54E+02	4.97E-03	1.79E-20
Praseodymium (59)	Pr-134	3.31E+04	2.09E-05	3.12E+01	2.12E+02	2.72E+01	2.13E-16
Praseodymium (59)	Pr-134m	2.14E+04	3.23E-05	3.09E+01	2.66E+02	2.77E+01	3.36E-16
Praseodymium (59)	Pr-135	1.52E+04	4.57E-05	2.56E+02	4.95E+02	1.69E+02	2.91E-15
Praseodymium (59)	Pr-136	2.78E+04	2.49E-05	3.22E+03	3.77E+02	3.37E+02	3.20E-15
Praseodymium (59)	Pr-137	4.74E+03	1.46E-04	5.71E+00	2.16E+03	5.69E+00	3.19E-16
Praseodymium (59)	Pr-138	2.51E+05	2.76E-06		1.01E+03	1.01E+03	1.07E-15
Praseodymium (59)	Pr-138m	2.86E+03	2.42E-04	5.95E+02	3.32E+02	2.13E+02	1.99E-14
Praseodymium (59)	Pr-139	1.38E+03	5.03E-04	2.51E+01	3.39E+03	2.49E+01	4.88E-15
Praseodymium (59)	Pr-140	1.07E+05	6.45E-06		1.54E+03	1.54E+03	3.89E-15
Praseodymium (59)	Pr-142	3.18E+02	2.18E-03	8.10E+01	1.07E+04	8.04E+01	6.98E-14
Praseodymium (59)	Pr-142m	2.49E+04	2.78E-05	8.00E+01	1.07E+04	7.94E+01	8.77E-16
Praseodymium (59)	Pr-143	1.86E+01	3.72E-02	1.99E+01	1.92E+05	1.99E+01	2.96E-13
Praseodymium (59)	Pr-144	2.11E+04	3.29E-05	2.69E-03	1.49E+04	2.69E-03	3.56E-20
Praseodymium (59)	Pr-144m	5.06E+04	1.37E-05	2.69E-03	1.36E+04	2.69E-03	1.49E-20
Praseodymium (59)	Pr-145	1.01E+03	6.83E-04	2.69E+02	2.74E+04	2.66E+02	7.39E-14
Praseodymium (59)	Pr-146	1.51E+04	4.59E-05	1.51E+03	7.62E+02	5.07E+02	9.52E-15
Praseodymium (59)	Pr-147	2.72E+04	2.55E-05	2.21E-03	1.36E+03	2.21E-03	2.32E-20

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation BDCC (no decay) DL=1 (pCi/m ³)	Submersion BDCC (no decay) DL=1 (pCi/m ³)	Total BDCC (no decay) DL=1 (pCi/m ³)	Total BDCC (no decay) DL=1 (mg/m ³)
Praseodymium (59)	Pr-148	1.59E+05	4.36E-06		7.77E+02	7.77E+02	1.40E-15
Praseodymium (59)	Pr-148m	1.81E+05	3.82E-06		8.58E+02	8.58E+02	1.36E-15
Platinum (78)	Pt-184	2.11E+04	3.29E-05	3.01E+02	3.12E+02	1.53E+02	2.60E-15
Platinum (78)	Pt-186	2.92E+03	2.37E-04	1.20E-02	3.51E+02	1.20E-02	1.48E-18
Platinum (78)	Pt-187	2.58E+03	2.68E-04	3.11E+02	9.24E+02	2.33E+02	3.27E-14
Platinum (78)	Pt-188	2.48E+01	2.79E-02	1.90E+01	3.44E+02	1.80E+01	2.64E-13
Platinum (78)	Pt-189	5.58E+02	1.24E-03	6.49E+01	1.61E+03	6.24E+01	4.10E-14
Platinum (78)	Pt-190	1.07E-12	6.50E+11	5.36E-03		5.36E-03	1.85E-03
Platinum (78)	Pt-191	9.03E+01	7.68E-03	1.28E+02	3.18E+03	1.23E+02	5.07E-13
Platinum (78)	Pt-193	1.39E-02	5.00E+01	7.44E+01	1.33E+08	7.44E+01	2.01E-09
Platinum (78)	Pt-193m	5.84E+01	1.19E-02	2.99E+01	1.02E+05	2.99E+01	1.92E-13
Platinum (78)	Pt-195m	6.29E+01	1.10E-02	4.19E+01	1.53E+04	4.18E+01	2.51E-13
Platinum (78)	Pt-197	3.05E+02	2.27E-03	1.25E+02	3.79E+04	1.25E+02	1.57E-13
Platinum (78)	Pt-197m	3.82E+03	1.82E-04	1.06E+02	8.89E+03	1.05E+02	1.05E-14
Platinum (78)	Pt-199	1.18E+04	5.86E-05	5.79E+01	2.84E+03	5.68E+01	1.85E-15
Platinum (78)	Pt-200	4.86E+02	1.43E-03	7.16E+01	2.40E+03	6.95E+01	5.55E-14
Platinum (78)	Pt-202	1.38E+02	5.02E-03	2.07E+01	3.99E+03	2.06E+01	5.85E-14
Plutonium (94)	Pu-232	1.08E+04	6.41E-05	8.14E-04	3.77E+02	8.14E-04	3.39E-20
Plutonium (94)	Pu-234	6.90E+02	1.00E-03	4.19E-04	2.89E+02	4.19E-04	2.76E-19
Plutonium (94)	Pu-235	1.44E+04	4.81E-05	1.66E-04	1.19E+03	1.66E-04	5.26E-21
Plutonium (94)	Pu-236	2.42E-01	2.86E+00	5.54E-04	5.19E+02	5.54E-04	1.05E-15
Plutonium (94)	Pu-237	5.60E+00	1.24E-01	4.66E-04	1.47E+03	4.66E-04	3.83E-17
Plutonium (94)	Pu-238	7.90E-03	8.77E+01	2.20E-04	4.53E+02	2.20E-04	1.29E-14
Plutonium (94)	Pu-239	2.87E-05	2.41E+04	1.21E-04	1.34E+03	1.21E-04	1.95E-12
Plutonium (94)	Pu-240	1.06E-04	6.56E+03	2.45E-04	3.34E+02	2.45E-04	1.08E-12
Plutonium (94)	Pu-241	4.83E-02	1.44E+01	2.50E-04	1.54E+03	2.50E-04	2.42E-15
Plutonium (94)	Pu-242	1.85E-06	3.75E+05	2.09E-04	4.43E+02	2.09E-04	5.30E-11
Plutonium (94)	Pu-243	1.22E+03	5.66E-04	9.93E-05	9.80E+02	9.93E-05	3.82E-20
Plutonium (94)	Pu-244	8.66E-09	8.00E+07	1.62E-04	2.92E+02	1.62E-04	8.87E-09
Plutonium (94)	Pu-245	5.78E+02	1.20E-03	1.71E-04	7.83E+02	1.71E-04	1.40E-19
Plutonium (94)	Pu-246	2.33E+01	2.97E-02	1.51E-04	2.76E+02	1.51E-04	3.08E-18
Radium (88)	Ra-219	2.19E+09	3.17E-10		4.84E+03	4.84E+03	9.42E-19
Radium (88)	Ra-220	1.22E+09	5.68E-10		1.81E+05	1.81E+05	6.34E-17
Radium (88)	Ra-221	7.81E+05	8.88E-07	7.74E+02	2.39E+04	7.50E+02	4.12E-16
Radium (88)	Ra-222	5.75E+05	1.20E-06	4.98E-03	5.02E+04	4.98E-03	3.73E-21
Radium (88)	Ra-223	2.21E+01	3.13E-02	5.75E-03	2.67E+03	5.75E-03	1.12E-16
Radium (88)	Ra-224	6.91E+01	1.00E-02	1.44E-02	5.20E+02	1.44E-02	9.04E-17
Radium (88)	Ra-225	1.70E+01	4.08E-02	3.07E-03	3.66E+03	3.07E-03	7.89E-17
Radium (88)	Ra-226	4.33E-04	1.60E+03	2.55E-03	4.53E+02	2.55E-03	2.58E-12
Radium (88)	Ra-227	8.63E+03	8.03E-05	6.80E-04	1.46E+03	6.80E-04	3.47E-20
Radium (88)	Ra-228	1.21E-01	5.75E+00	8.40E-04	3.34E+02	8.40E-04	3.08E-15
Radium (88)	Ra-230	3.92E+03	1.77E-04	4.32E-04	3.33E+02	4.32E-04	4.92E-20
Rubidium (37)	Rb-77	9.66E+04	7.17E-06	5.05E+02	2.86E+02	1.83E+02	2.82E-16
Rubidium (37)	Rb-78	2.06E+04	3.36E-05	1.52E+03	1.84E+02	1.64E+02	1.20E-15
Rubidium (37)	Rb-78m	6.35E+04	1.09E-05	1.52E+04	2.18E+02	2.15E+02	5.12E-16
Rubidium (37)	Rb-79	1.59E+04	4.36E-05	1.58E+03	4.92E+02	3.75E+02	3.61E-15

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Rubidium (37)	Rb-80	6.54E+05	1.06E-06		6.77E+02	6.77E+02	1.61E-16
Rubidium (37)	Rb-81	1.33E+03	5.22E-04	6.47E+02	1.35E+03	4.37E+02	5.18E-14
Rubidium (37)	Rb-81m	1.19E+04	5.80E-05	5.37E+02	1.33E+03	3.82E+02	5.03E-15
Rubidium (37)	Rb-82	2.86E+05	2.42E-06		7.37E+02	7.37E+02	4.10E-16
Rubidium (37)	Rb-82m	9.38E+02	7.39E-04	3.04E+02	2.80E+02	1.46E+02	2.47E-14
Rubidium (37)	Rb-83	2.93E+00	2.36E-01	3.47E+01	1.74E+03	3.40E+01	1.86E-12
Rubidium (37)	Rb-84	7.72E+00	8.98E-02	1.67E+01	9.08E+02	1.64E+01	3.46E-13
Rubidium (37)	Rb-84m	1.80E+04	3.85E-05	1.66E+01	6.46E+02	1.62E+01	1.47E-16
Rubidium (37)	Rb-86	1.36E+01	5.11E-02	1.03E+01	7.69E+03	1.02E+01	1.26E-13
Rubidium (37)	Rb-86m	3.58E+05	1.93E-06	1.03E+01	1.28E+03	1.02E+01	4.74E-18
Rubidium (37)	Rb-87	1.41E-11	4.92E+10	3.22E+00	1.05E+06	3.22E+00	3.86E-02
Rubidium (37)	Rb-88	2.05E+04	3.38E-05	1.62E+03	1.11E+03	6.60E+02	5.50E-15
Rubidium (37)	Rb-89	2.40E+04	2.88E-05	6.10E+00	3.43E+02	6.00E+00	4.31E-17
Rubidium (37)	Rb-90	1.38E+05	5.01E-06	3.26E-01	3.44E+02	3.26E-01	4.11E-19
Rubidium (37)	Rb-90m	8.47E+04	8.18E-06	3.26E-01	2.25E+02	3.26E-01	6.71E-19
Rhenium (75)	Re-178	2.76E+04	2.51E-05	5.70E+01	4.32E+02	5.04E+01	6.30E-16
Rhenium (75)	Re-179	1.87E+04	3.71E-05	9.64E+01	7.27E+02	8.51E+01	1.58E-15
Rhenium (75)	Re-180	1.49E+05	4.64E-06		6.90E+02	6.90E+02	1.61E-15
Rhenium (75)	Re-181	3.05E+02	2.27E-03	8.46E+01	1.03E+03	7.82E+01	9.00E-14
Rhenium (75)	Re-182	9.49E+01	7.31E-03	3.65E+01	4.63E+02	3.39E+01	1.26E-13
Rhenium (75)	Re-182m	4.78E+02	1.45E-03	2.11E+02	6.71E+02	1.61E+02	1.19E-13
Rhenium (75)	Re-183	3.61E+00	1.92E-01	1.37E+01	6.78E+03	1.37E+01	1.35E-12
Rhenium (75)	Re-184	6.66E+00	1.04E-01	2.10E+01	9.40E+02	2.06E+01	1.10E-12
Rhenium (75)	Re-184m	1.50E+00	4.63E-01	4.11E+00	8.07E+02	4.09E+00	9.76E-13
Rhenium (75)	Re-186	6.80E+01	1.02E-02	1.29E-02	3.77E+04	1.29E-02	6.87E-17
Rhenium (75)	Re-186m	3.47E-06	2.00E+05	1.28E-02	2.64E+04	1.28E-02	1.33E-09
Rhenium (75)	Re-187	1.68E-11	4.12E+10	1.27E+03		1.27E+03	2.74E+01
Rhenium (75)	Re-188	3.57E+02	1.94E-03	8.09E+01	1.14E+04	8.03E+01	8.21E-14
Rhenium (75)	Re-188m	1.96E+04	3.54E-05	7.89E+01	6.76E+03	7.80E+01	1.45E-15
Rhenium (75)	Re-189	2.50E+02	2.77E-03	1.07E+02	1.47E+04	1.06E+02	1.55E-13
Rhenium (75)	Re-190	1.17E+05	5.90E-06		6.21E+02	6.21E+02	1.95E-15
Rhenium (75)	Re-190m	1.90E+03	3.65E-04	2.22E+02	5.45E+02	1.57E+02	3.06E-14
Rhodium (45)	Rh-100	2.92E+02	2.37E-03	1.30E+02	2.84E+02	8.93E+01	5.94E-14
Rhodium (45)	Rh-100m	7.92E+04	8.75E-06	1.33E+02	2.85E+02	9.04E+01	2.22E-16
Rhodium (45)	Rh-101	2.10E-01	3.30E+00	9.72E+00	3.21E+03	9.69E+00	9.05E-12
Rhodium (45)	Rh-101m	5.83E+01	1.19E-02	9.10E+01	2.92E+03	8.83E+01	2.97E-13
Rhodium (45)	Rh-102	1.22E+00	5.67E-01	6.75E+00	1.67E+03	6.72E+00	1.09E-12
Rhodium (45)	Rh-102m	1.85E-01	3.74E+00	2.54E+00	3.85E+02	2.52E+00	2.69E-12
Rhodium (45)	Rh-103m	6.49E+03	1.07E-04	1.74E+04	6.69E+06	1.74E+04	5.35E-13
Rhodium (45)	Rh-104	5.17E+05	1.34E-06		2.68E+04	2.68E+04	1.05E-14
Rhodium (45)	Rh-104m	8.39E+04	8.26E-06		1.62E+04	1.62E+04	3.90E-14
Rhodium (45)	Rh-105	1.72E+02	4.04E-03	1.34E+02	1.08E+04	1.33E+02	1.58E-13
Rhodium (45)	Rh-106	7.33E+05	9.45E-07		3.51E+03	3.51E+03	9.83E-16
Rhodium (45)	Rh-106m	2.78E+03	2.49E-04	4.10E+02	2.84E+02	1.68E+02	1.24E-14
Rhodium (45)	Rh-107	1.68E+04	4.13E-05	7.97E+01	2.66E+03	7.74E+01	9.57E-16
Rhodium (45)	Rh-108	1.30E+06	5.33E-07		2.33E+03	2.33E+03	3.75E-16

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Rhodium (45)	Rh-109	2.73E+05	2.54E-06	1.23E+02	2.64E+03	1.17E+02	9.09E-17
Rhodium (45)	Rh-94	3.10E+05	2.24E-06	4.31E+02	1.27E+02	9.82E+01	5.79E-17
Rhodium (45)	Rh-95	7.26E+04	9.55E-06	2.48E+02	1.76E+02	1.03E+02	2.61E-16
Rhodium (45)	Rh-95m	1.86E+05	3.73E-06	2.48E+02	1.55E+02	9.54E+01	9.46E-17
Rhodium (45)	Rh-96	3.68E+04	1.88E-05		2.07E+02	2.07E+02	1.05E-15
Rhodium (45)	Rh-96m	2.41E+05	2.87E-06		2.22E+02	2.22E+02	1.72E-16
Rhodium (45)	Rh-97	1.19E+04	5.84E-05	2.61E+01	4.94E+02	2.48E+01	3.94E-16
Rhodium (45)	Rh-97m	7.88E+03	8.79E-05	2.61E+01	3.13E+02	2.41E+01	5.74E-16
Rhodium (45)	Rh-98	4.19E+04	1.66E-05		4.50E+02	4.50E+02	2.04E-15
Rhodium (45)	Rh-99	1.57E+01	4.41E-02	3.83E+01	1.55E+03	3.74E+01	4.57E-13
Rhodium (45)	Rh-99m	1.29E+03	5.37E-04	1.10E+03	1.30E+03	5.96E+02	8.86E-14
Radon (86)	Rn-207	3.94E+04	1.76E-05	1.71E+00	1.43E+02	1.69E+00	1.72E-17
Radon (86)	Rn-209	1.28E+04	5.42E-05	6.65E-03	2.22E+02	6.65E-03	2.11E-19
Radon (86)	Rn-210	2.53E+03	2.74E-04	2.08E-01	1.90E+02	2.08E-01	3.34E-17
Radon (86)	Rn-211	4.16E+02	1.67E-03	4.58E-01	2.61E+02	4.57E-01	4.50E-16
Radon (86)	Rn-212	1.52E+04	4.55E-05	7.28E-03	1.95E+06	7.28E-03	1.97E-19
Radon (86)	Rn-215	9.50E+12	7.29E-14		1.01E+05	1.01E+05	4.42E-21
Radon (86)	Rn-216	4.86E+11	1.43E-12				
Radon (86)	Rn-217	4.05E+10	1.71E-11	7.74E+02	3.69E+05	7.73E+02	8.04E-21
Radon (86)	Rn-218	6.24E+08	1.11E-09	4.98E-03	1.09E+05	4.98E-03	3.37E-24
Radon (86)	Rn-219	5.52E+06	1.26E-07	3.97E+00	4.51E+03	3.97E+00	3.06E-19
Radon (86)	Rn-220	3.93E+05	1.76E-06	4.44E-01	5.23E+02	4.43E-01	4.81E-19
Radon (86)	Rn-222	6.62E+01	1.05E-02	4.97E-03	4.54E+02	4.97E-03	3.23E-17
Radon (86)	Rn-223	1.50E+04	4.62E-05	5.74E-03	1.18E+03	5.74E-03	1.66E-19
Ruthenium (44)	Ru-103	6.44E+00	1.08E-01	1.71E+01	1.70E+03	1.70E+01	5.26E-13
Ruthenium (44)	Ru-105	1.37E+03	5.07E-04	8.53E+01	1.00E+03	7.86E+01	1.17E-14
Ruthenium (44)	Ru-106	6.77E-01	1.02E+00	7.48E-01	3.51E+03	7.47E-01	2.27E-13
Ruthenium (44)	Ru-107	9.71E+04	7.13E-06	7.97E+01	1.21E+03	7.47E+01	1.60E-16
Ruthenium (44)	Ru-108	8.01E+04	8.66E-06		1.97E+03	1.97E+03	5.16E-15
Ruthenium (44)	Ru-92	9.98E+04	6.94E-06		1.37E+02	1.37E+02	2.45E-16
Ruthenium (44)	Ru-94	7.03E+03	9.86E-05	4.31E+02	3.29E+02	1.87E+02	4.84E-15
Ruthenium (44)	Ru-95	3.69E+03	1.88E-04	2.48E+02	4.05E+02	1.54E+02	7.67E-15
Ruthenium (44)	Ru-97	8.72E+01	7.95E-03	2.65E+01	3.76E+03	2.63E+01	5.68E-14
Sulfur (16)	S-35	2.89E+00	2.40E-01	2.65E+01	1.22E+07	2.65E+01	6.23E-13
Sulphur (16)	S-37	7.21E+04	9.61E-06		2.44E+02	2.44E+02	2.42E-16
Sulfur (16)	S-38	2.14E+03	3.24E-04	1.32E+02	2.37E+02	8.47E+01	2.92E-15
Antimony (51)	Sb-111	2.91E+05	2.38E-06	1.79E+02	3.52E+02	1.19E+02	8.76E-17
Antimony (51)	Sb-113	5.46E+04	1.27E-05	1.23E+01	5.47E+02	1.21E+01	4.85E-17
Antimony (51)	Sb-114	1.04E+05	6.64E-06		2.95E+02	2.95E+02	6.26E-16
Antimony (51)	Sb-115	1.13E+04	6.11E-05	3.32E+03	9.52E+02	7.40E+02	1.45E-14
Antimony (51)	Sb-116	2.31E+04	3.01E-05	3.07E+03	3.47E+02	3.12E+02	3.05E-15
Antimony (51)	Sb-116m	6.04E+03	1.15E-04	9.57E+02	2.62E+02	2.06E+02	7.67E-15
Antimony (51)	Sb-117	2.17E+03	3.20E-04	2.59E+03	5.19E+03	1.73E+03	1.81E-13
Antimony (51)	Sb-118	1.01E+05	6.85E-06		1.03E+03	1.03E+03	2.33E-15
Antimony (51)	Sb-118m	1.21E+03	5.71E-04	3.60E+02	3.10E+02	1.67E+02	3.14E-14
Antimony (51)	Sb-119	1.59E+02	4.36E-03	1.13E+03	2.48E+05	1.13E+03	1.64E-12

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Antimony (51)	Sb-120	2.29E+04	3.02E-05	6.21E+03	1.88E+03	1.44E+03	1.46E-14
Antimony (51)	Sb-120m	4.39E+01	1.58E-02	4.26E+01	3.32E+02	3.77E+01	2.00E-13
Antimony (51)	Sb-122	9.29E+01	7.46E-03	4.10E+01	1.84E+03	4.01E+01	1.02E-13
Antimony (51)	Sb-122m	8.69E+04	7.97E-06	4.10E+01	1.69E+03	4.00E+01	1.09E-16
Antimony (51)	Sb-124	4.20E+00	1.65E-01	5.70E+00	4.26E+02	5.62E+00	3.22E-13
Antimony (51)	Sb-124m	2.35E+05	2.95E-06	7.59E+00	4.37E+02	7.46E+00	7.64E-18
Antimony (51)	Sb-124n	1.80E+04	3.84E-05	7.59E+00	4.37E+02	7.46E+00	9.95E-17
Antimony (51)	Sb-125	2.51E-01	2.76E+00	3.85E+00	1.97E+03	3.84E+00	3.71E-12
Antimony (51)	Sb-126	2.05E+01	3.38E-02	1.36E+01	3.00E+02	1.30E+01	1.55E-13
Antimony (51)	Sb-126m	1.90E+04	3.64E-05	9.32E+01	4.28E+02	7.66E+01	9.84E-16
Antimony (51)	Sb-127	6.57E+01	1.05E-02	1.29E+01	1.18E+03	1.27E+01	4.77E-14
Antimony (51)	Sb-128	6.74E+02	1.03E-03	1.03E+02	2.66E+02	7.40E+01	2.73E-14
Antimony (51)	Sb-128m	3.50E+04	1.98E-05	1.47E+03	4.06E+02	3.18E+02	2.26E-15
Antimony (51)	Sb-129	1.38E+03	5.02E-04	4.90E-01	5.23E+02	4.90E-01	8.88E-17
Antimony (51)	Sb-130	9.22E+03	7.52E-05	8.39E+02	2.48E+02	1.92E+02	5.24E-15
Antimony (51)	Sb-130m	5.78E+04	1.20E-05		2.98E+02	2.98E+02	1.30E-15
Antimony (51)	Sb-131	1.58E+04	4.38E-05	2.04E+00	2.70E+02	2.03E+00	3.25E-17
Antimony (51)	Sb-133	1.46E+05	4.76E-06	9.67E+00	1.66E+02	9.14E+00	1.62E-17
Scandium (21)	Sc-42m	3.52E+05	1.97E-06		1.89E+02	1.89E+02	4.38E-17
Scandium (21)	Sc-43	1.56E+03	4.44E-04	3.63E+02	8.51E+02	2.54E+02	1.36E-14
Scandium (21)	Sc-44	1.53E+03	4.53E-04	2.42E+02	3.80E+02	1.48E+02	8.26E-15
Scandium (21)	Sc-44m	1.04E+02	6.69E-03	2.89E+01	3.42E+02	2.66E+01	2.20E-14
Scandium (21)	Sc-46	3.02E+00	2.30E-01	7.25E+00	4.00E+02	7.12E+00	2.10E-13
Scandium (21)	Sc-47	7.55E+01	9.18E-03	6.66E+01	7.98E+03	6.60E+01	7.97E-14
Scandium (21)	Sc-48	1.39E+02	4.99E-03	4.16E+01	2.37E+02	3.54E+01	2.37E-14
Scandium (21)	Sc-49	6.37E+03	1.09E-04	1.16E+03	5.26E+04	1.13E+03	1.69E-14
Scandium (21)	Sc-50	2.13E+05	3.25E-06		2.44E+02	2.44E+02	1.11E-16
Selenium (34)	Se-70	8.86E+03	7.82E-05	3.22E+02	1.62E+02	1.08E+02	1.65E-15
Selenium (34)	Se-71	7.68E+04	9.02E-06	1.19E+02	3.77E+02	9.06E+01	1.62E-16
Selenium (34)	Se-72	3.01E+01	2.30E-02	1.02E+01	4.54E+02	9.97E+00	4.63E-14
Selenium (34)	Se-73	8.49E+02	8.16E-04	3.05E+01	7.77E+02	2.94E+01	4.90E-15
Selenium (34)	Se-73m	9.15E+03	7.57E-05	3.13E+01	8.00E+02	3.01E+01	4.66E-16
Selenium (34)	Se-75	2.11E+00	3.28E-01	3.70E+01	2.26E+03	3.64E+01	2.51E-12
Selenium (34)	Se-77m	1.26E+06	5.50E-07		1.01E+04	1.01E+04	1.20E-15
Selenium (34)	Se-79	2.35E-06	2.95E+05	7.97E+00	1.23E+07	7.97E+00	5.20E-07
Selenium (34)	Se-79m	9.29E+04	7.46E-06	7.98E+00	1.03E+05	7.98E+00	1.32E-17
Selenium (34)	Se-81	1.97E+04	3.51E-05	3.14E+03	4.60E+04	2.94E+03	2.34E-14
Selenium (34)	Se-81m	6.36E+03	1.09E-04	7.06E+02	2.74E+04	6.88E+02	1.70E-14
Selenium (34)	Se-83	1.63E+04	4.24E-05	5.39E+02	3.01E+02	1.93E+02	1.91E-15
Selenium (34)	Se-83m	3.12E+05	2.22E-06	8.95E+02	7.76E+02	4.16E+02	2.15E-16
Selenium (34)	Se-84	1.17E+05	5.90E-06	1.17E+03	3.48E+02	2.68E+02	3.72E-16
Silicon (14)	Si-31	2.32E+03	2.99E-04	5.81E+02	7.77E+04	5.77E+02	1.50E-14
Silicon (14)	Si-32	5.25E-03	1.32E+02	4.49E-01	6.86E+04	4.49E-01	5.31E-12
Samarium (62)	Sm-139	1.42E+05	4.89E-06	2.49E+01	2.68E+02	2.28E+01	4.34E-17
Samarium (62)	Sm-140	2.46E+04	2.82E-05	3.95E+01	3.77E+02	3.57E+01	3.95E-16
Samarium (62)	Sm-141	3.57E+04	1.94E-05	1.27E+03	3.72E+02	2.87E+02	2.20E-15

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Samarium (62)	Sm-141m	1.61E+04	4.30E-05	8.63E+02	2.99E+02	2.22E+02	3.77E-15
Samarium (62)	Sm-142	5.02E+03	1.38E-04	6.09E+02	8.59E+02	3.56E+02	1.95E-14
Samarium (62)	Sm-143	4.16E+04	1.66E-05	1.65E+01	1.01E+03	1.63E+01	1.08E-16
Samarium (62)	Sm-143m	3.31E+05	2.09E-06	1.65E+01	5.50E+02	1.60E+01	1.34E-17
Samarium (62)	Sm-145	7.44E-01	9.32E-01	4.53E+00	2.11E+04	4.53E+00	1.71E-12
Samarium (62)	Sm-146	6.73E-09	1.03E+08	2.02E-03		2.02E-03	8.52E-08
Samarium (62)	Sm-147	6.54E-12	1.06E+11	2.22E-03		2.22E-03	9.67E-05
Samarium (62)	Sm-148	9.90E-17	7.00E+15	1.32E-03		1.32E-03	3.82E+00
Samarium (62)	Sm-151	7.70E-03	9.00E+01	5.49E+00	1.42E+09	5.49E+00	2.09E-10
Samarium (62)	Sm-153	1.31E+02	5.31E-03	6.84E+01	1.77E+04	6.82E+01	1.55E-13
Samarium (62)	Sm-155	1.63E+04	4.24E-05	8.28E+00	5.68E+03	8.26E+00	1.52E-16
Samarium (62)	Sm-156	6.46E+02	1.07E-03	1.15E+01	5.85E+02	1.13E+01	5.30E-15
Samarium (62)	Sm-157	4.54E+04	1.53E-05	1.42E+02	1.19E+03	1.27E+02	8.54E-16
Tin (50)	Sn-106	1.90E+05	3.65E-06		1.98E+02	1.98E+02	2.15E-16
Tin (50)	Sn-108	3.54E+04	1.96E-05	9.12E+02	2.28E+02	1.82E+02	1.08E-15
Tin (50)	Sn-109	2.02E+04	3.42E-05	7.76E+00	2.65E+02	7.54E+00	7.88E-17
Tin (50)	Sn-110	1.48E+03	4.69E-04	2.05E+02	4.43E+02	1.40E+02	2.02E-14
Tin (50)	Sn-111	1.03E+04	6.72E-05	1.79E+02	9.61E+02	1.51E+02	3.15E-15
Tin (50)	Sn-113	2.20E+00	3.15E-01	1.21E+01	3.22E+03	1.21E+01	1.20E-12
Tin (50)	Sn-113m	1.70E+04	4.07E-05	1.33E+01	3.50E+03	1.32E+01	1.70E-16
Tin (50)	Sn-117m	1.84E+01	3.77E-02	1.74E+01	6.12E+03	1.74E+01	2.15E-13
Tin (50)	Sn-119m	8.63E-01	8.03E-01	1.43E+01	4.06E+05	1.43E+01	3.82E-12
Tin (50)	Sn-121	2.25E+02	3.09E-03	1.90E+02	9.43E+05	1.90E+02	1.99E-13
Tin (50)	Sn-121m	1.58E-02	4.39E+01	3.35E+00	4.47E+05	3.35E+00	4.99E-11
Tin (50)	Sn-123	1.96E+00	3.54E-01	3.81E+00	5.35E+04	3.81E+00	4.64E-13
Tin (50)	Sn-123m	9.09E+03	7.62E-05	1.62E+03	6.04E+03	1.28E+03	3.36E-14
Tin (50)	Sn-125	2.62E+01	2.64E-02	3.00E+00	1.06E+03	2.99E+00	2.77E-14
Tin (50)	Sn-125m	3.83E+04	1.81E-05	3.85E+00	1.07E+03	3.84E+00	2.43E-17
Tin (50)	Sn-126	3.01E-06	2.30E+05	3.24E-01	4.19E+02	3.24E-01	2.63E-08
Tin (50)	Sn-127	2.89E+03	2.40E-04	1.24E+01	3.08E+02	1.19E+01	1.01E-15
Tin (50)	Sn-127m	8.82E+04	7.86E-06	1.29E+01	6.42E+02	1.26E+01	3.52E-17
Tin (50)	Sn-128	6.17E+03	1.12E-04	3.59E+02	3.19E+02	1.69E+02	6.80E-15
Tin (50)	Sn-129	1.63E+05	4.24E-06	4.90E-01	3.14E+02	4.89E-01	7.50E-19
Tin (50)	Sn-130	9.79E+04	7.08E-06		2.24E+02	2.24E+02	5.77E-16
Tin (50)	Sn-130m	2.14E+05	3.23E-06	9.76E+02	1.98E+02	1.65E+02	1.94E-16
Strontium (38)	Sr-79	1.62E+05	4.28E-06	1.58E+03	2.88E+02	2.44E+02	2.31E-16
Strontium (38)	Sr-80	3.43E+03	2.02E-04	2.83E+02	5.03E+02	1.81E+02	8.20E-15
Strontium (38)	Sr-81	1.63E+04	4.24E-05	4.42E+02	4.15E+02	2.14E+02	2.06E-15
Strontium (38)	Sr-82	9.97E+00	6.95E-02	4.43E+00	7.37E+02	4.40E+00	7.03E-14
Strontium (38)	Sr-83	1.87E+02	3.70E-03	2.72E+01	6.40E+02	2.61E+01	2.24E-14
Strontium (38)	Sr-85	3.90E+00	1.78E-01	5.86E+01	1.71E+03	5.67E+01	2.40E-12
Strontium (38)	Sr-85m	5.39E+03	1.29E-04	6.73E+01	1.32E+03	6.40E+01	1.96E-15
Strontium (38)	Sr-87m	2.16E+03	3.21E-04	7.14E+02	2.66E+03	5.63E+02	4.41E-14
Strontium (38)	Sr-89	5.01E+00	1.38E-01	6.12E+00	8.54E+04	6.12E+00	2.11E-13
Strontium (38)	Sr-90	2.41E-02	2.88E+01	3.26E-01	4.22E+04	3.26E-01	2.37E-12
Strontium (38)	Sr-91	6.30E+02	1.10E-03	5.19E+00	7.89E+02	5.16E+00	1.44E-15

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Strontium (38)	Sr-92	2.28E+03	3.04E-04	1.11E+02	4.85E+02	9.06E+01	7.09E-15
Strontium (38)	Sr-93	4.91E+04	1.41E-05	2.20E+00	3.33E+02	2.19E+00	8.04E-18
Strontium (38)	Sr-94	2.90E+05	2.39E-06	1.64E+03	3.49E+02	2.88E+02	1.81E-16
Tantalum (73)	Ta-170	5.39E+04	1.29E-05	4.92E+01	1.95E+02	3.93E+01	2.41E-16
Tantalum (73)	Ta-172	9.90E+03	7.00E-05	1.86E+00	2.20E+02	1.85E+00	6.22E-17
Tantalum (73)	Ta-173	1.93E+03	3.58E-04	1.28E+01	7.77E+02	1.26E+01	2.18E-15
Tantalum (73)	Ta-174	5.33E+03	1.30E-04	1.02E-02	8.41E+02	1.02E-02	6.47E-19
Tantalum (73)	Ta-175	5.78E+02	1.20E-03	3.13E+01	5.72E+02	2.96E+01	1.74E-14
Tantalum (73)	Ta-176	7.50E+02	9.24E-04	2.24E+02	3.51E+02	1.37E+02	6.23E-14
Tantalum (73)	Ta-177	1.07E+02	6.46E-03	4.43E+02	1.73E+04	4.32E+02	1.38E-12
Tantalum (73)	Ta-178	3.91E+04	1.77E-05		7.95E+03	7.95E+03	7.02E-14
Tantalum (73)	Ta-178m	2.57E+03	2.69E-04	6.03E+02	7.64E+02	3.37E+02	4.53E-14
Tantalum (73)	Ta-179	3.81E-01	1.82E+00	9.90E+01	5.39E+04	9.88E+01	9.01E-11
Tantalum (73)	Ta-180	7.45E+02	9.31E-04	1.07E+03	2.64E+04	1.03E+03	4.82E-13
Tantalum (73)	Ta-182	2.21E+00	3.14E-01	4.74E+00	6.27E+02	4.71E+00	7.52E-13
Tantalum (73)	Ta-182m	2.30E+04	3.01E-05	4.73E+00	5.34E+02	4.69E+00	7.20E-17
Tantalum (73)	Ta-183	4.96E+01	1.40E-02	2.16E+01	3.13E+03	2.15E+01	1.54E-13
Tantalum (73)	Ta-184	6.98E+02	9.93E-04	1.06E+02	5.31E+02	8.83E+01	4.52E-14
Tantalum (73)	Ta-185	7.37E+03	9.40E-05	1.26E+01	5.56E+03	1.25E+01	6.11E-16
Tantalum (73)	Ta-186	3.47E+04	2.00E-05	2.53E+03	5.83E+02	4.74E+02	4.93E-15
Terbium (65)	Tb-146	9.50E+05	7.29E-07	2.02E-03	1.28E+02	2.02E-03	6.03E-22
Terbium (65)	Tb-147	3.70E+03	1.87E-04	2.22E-03	2.03E+02	2.22E-03	1.71E-19
Terbium (65)	Tb-147m	1.95E+05	3.56E-06	2.22E-03	2.15E+02	2.22E-03	3.24E-21
Terbium (65)	Tb-148	6.07E+03	1.14E-04	8.15E-03	3.38E+02	8.15E-03	3.86E-19
Terbium (65)	Tb-148m	1.66E+05	4.19E-06	8.15E-03	2.64E+02	8.15E-03	1.41E-20
Terbium (65)	Tb-149	1.47E+03	4.70E-04	6.56E+00	4.02E+02	6.45E+00	1.27E-15
Terbium (65)	Tb-149m	8.76E+04	7.91E-06	3.51E+01	4.34E+02	3.25E+01	1.07E-16
Terbium (65)	Tb-150	1.74E+03	3.97E-04	1.67E-03	3.21E+02	1.67E-03	2.79E-19
Terbium (65)	Tb-150m	6.28E+04	1.10E-05	1.67E-03	3.35E+02	1.67E-03	7.74E-21
Terbium (65)	Tb-151	3.45E+02	2.01E-03	1.38E+01	8.23E+02	1.35E+01	1.15E-14
Terbium (65)	Tb-151m	8.74E+05	7.93E-07	1.44E+01	8.17E+02	1.42E+01	4.75E-18
Terbium (65)	Tb-152	3.47E+02	2.00E-03	8.83E-04	5.37E+02	8.83E-04	7.51E-19
Terbium (65)	Tb-152m	8.67E+04	7.99E-06	8.83E-04	4.27E+02	8.83E-04	3.00E-21
Terbium (65)	Tb-153	1.08E+02	6.41E-03	1.85E+01	2.26E+03	1.84E+01	5.05E-14
Terbium (65)	Tb-154	2.82E+02	2.45E-03	1.26E+02	3.38E+02	9.16E+01	9.70E-14
Terbium (65)	Tb-155	4.75E+01	1.46E-02	1.54E+02	5.95E+03	1.51E+02	9.52E-13
Terbium (65)	Tb-156	4.73E+01	1.47E-02	3.75E+01	4.23E+02	3.45E+01	2.21E-13
Terbium (65)	Tb-156m	2.49E+02	2.79E-03	3.23E+01	4.19E+02	3.00E+01	3.65E-14
Terbium (65)	Tb-156n	1.15E+03	6.05E-04	3.45E+01	4.22E+02	3.19E+01	8.42E-15
Terbium (65)	Tb-157	9.76E-03	7.10E+01	1.58E+01	3.82E+05	1.58E+01	4.93E-10
Terbium (65)	Tb-158	3.85E-03	1.80E+02	4.91E-01	1.04E+03	4.91E-01	3.91E-11
Terbium (65)	Tb-160	3.50E+00	1.98E-01	5.89E+00	7.21E+02	5.85E+00	5.19E-13
Terbium (65)	Tb-161	3.66E+01	1.89E-02	3.40E+01	4.10E+04	3.40E+01	2.90E-13
Terbium (65)	Tb-162	4.79E+04	1.45E-05		7.44E+02	7.44E+02	4.88E-15
Terbium (65)	Tb-163	1.87E+04	3.71E-05	2.66E+03	1.07E+03	7.63E+02	1.29E-14
Terbium (65)	Tb-164	1.21E+05	5.71E-06		3.29E+02	3.29E+02	8.62E-16

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Terbium (65)	Tb-165	1.73E+05	4.01E-06	7.33E+02	8.85E+02	4.01E+02	7.44E-16
Technetium (43)	Tc-101	2.57E+04	2.70E-05	3.75E+03	2.47E+03	1.49E+03	1.14E-14
Technetium (43)	Tc-102	4.14E+06	1.67E-07		6.41E+03	6.41E+03	3.07E-16
Technetium (43)	Tc-102m	8.37E+04	8.28E-06		3.18E+02	3.18E+02	7.51E-16
Technetium (43)	Tc-104	1.99E+04	3.48E-05	1.52E+03	3.41E+02	2.79E+02	2.82E-15
Technetium (43)	Tc-105	4.79E+04	1.45E-05	8.53E+01	5.00E+02	7.28E+01	3.10E-16
Technetium (43)	Tc-91	1.16E+05	5.97E-06	2.69E+01	2.27E+02	2.40E+01	3.66E-17
Technetium (43)	Tc-91m	1.10E+05	6.28E-06	1.29E+01	2.45E+02	1.23E+01	1.96E-17
Technetium (43)	Tc-92	8.57E+04	8.09E-06		2.10E+02	2.10E+02	4.37E-16
Technetium (43)	Tc-93	2.21E+03	3.14E-04	1.27E+01	5.03E+02	1.24E+01	1.01E-15
Technetium (43)	Tc-93m	8.37E+03	8.28E-05	1.27E+01	3.62E+02	1.22E+01	2.64E-16
Technetium (43)	Tc-94	1.24E+03	5.57E-04	3.47E+02	3.10E+02	1.64E+02	2.40E-14
Technetium (43)	Tc-94m	7.00E+03	9.89E-05	9.64E+02	4.12E+02	2.88E+02	7.51E-15
Technetium (43)	Tc-95	3.04E+02	2.28E-03	4.06E+02	1.04E+03	2.93E+02	1.78E-13
Technetium (43)	Tc-95m	4.15E+00	1.67E-01	3.96E+01	1.17E+03	3.83E+01	1.70E-12
Technetium (43)	Tc-96	5.91E+01	1.17E-02	6.37E+01	3.29E+02	5.33E+01	1.68E-13
Technetium (43)	Tc-96m	7.07E+03	9.80E-05	6.43E+01	3.30E+02	5.38E+01	1.42E-15
Technetium (43)	Tc-97	2.67E-07	2.60E+06	2.84E+01	1.70E+06	2.84E+01	2.01E-05
Technetium (43)	Tc-97m	2.81E+00	2.47E-01	8.37E+00	6.37E+05	8.37E+00	5.61E-13
Technetium (43)	Tc-98	1.65E-07	4.20E+06	1.21E+00	5.85E+02	1.21E+00	1.39E-06
Technetium (43)	Tc-99	3.28E-06	2.11E+05	3.81E+00	1.30E+06	3.81E+00	2.23E-07
Technetium (43)	Tc-99m	1.01E+03	6.87E-04	3.80E+00	7.08E+03	3.80E+00	7.23E-16
Tellurium (52)	Te-113	2.14E+05	3.23E-06	1.23E+01	2.16E+02	1.17E+01	1.20E-17
Tellurium (52)	Te-114	2.40E+04	2.89E-05	1.42E+03	2.01E+02	1.76E+02	1.63E-15
Tellurium (52)	Te-115	6.28E+04	1.10E-05	3.32E+03	2.60E+02	2.41E+02	8.56E-16
Tellurium (52)	Te-115m	5.44E+04	1.27E-05	3.32E+03	2.32E+02	2.17E+02	8.92E-16
Tellurium (52)	Te-116	2.44E+03	2.84E-04	3.23E+02	3.36E+02	1.65E+02	1.52E-14
Tellurium (52)	Te-117	5.87E+03	1.18E-04	9.90E+02	4.70E+02	3.19E+02	1.23E-14
Tellurium (52)	Te-118	4.22E+01	1.64E-02	1.83E+01	1.02E+03	1.80E+01	9.78E-14
Tellurium (52)	Te-119	3.78E+02	1.83E-03	3.01E+02	1.09E+03	2.36E+02	1.44E-13
Tellurium (52)	Te-119m	5.38E+01	1.29E-02	6.93E+01	5.37E+02	6.14E+01	2.63E-13
Tellurium (52)	Te-121	1.32E+01	5.25E-02	8.28E+01	1.49E+03	7.84E+01	1.39E-12
Tellurium (52)	Te-121m	1.64E+00	4.22E-01	7.80E+00	1.20E+03	7.75E+00	1.11E-12
Tellurium (52)	Te-123	1.16E-15	6.00E+14	1.38E+01	1.43E+08	1.38E+01	2.84E+03
Tellurium (52)	Te-123m	2.12E+00	3.27E-01	5.70E+00	6.46E+03	5.70E+00	6.41E-13
Tellurium (52)	Te-125m	4.41E+00	1.57E-01	1.20E+01	1.12E+05	1.20E+01	6.60E-13
Tellurium (52)	Te-127	6.49E+02	1.07E-03	3.26E+02	1.12E+05	3.25E+02	1.23E-13
Tellurium (52)	Te-127m	2.32E+00	2.99E-01	4.93E+00	8.55E+04	4.93E+00	5.24E-13
Tellurium (52)	Te-129	5.23E+03	1.32E-04	5.00E-01	1.15E+04	5.00E-01	2.39E-17
Tellurium (52)	Te-129m	7.53E+00	9.21E-02	4.63E-01	1.00E+04	4.63E-01	1.54E-14
Tellurium (52)	Te-131	1.46E+04	4.76E-05	2.06E+00	1.04E+03	2.06E+00	3.59E-17
Tellurium (52)	Te-131m	2.02E+02	3.42E-03	1.85E+00	4.25E+02	1.84E+00	2.31E-15
Tellurium (52)	Te-132	7.89E+01	8.78E-03	7.73E+00	3.31E+02	7.55E+00	2.45E-14
Tellurium (52)	Te-133	2.91E+04	2.38E-05	9.73E+00	4.37E+02	9.52E+00	8.43E-17
Tellurium (52)	Te-133m	6.57E+03	1.05E-04	9.36E+00	2.99E+02	9.08E+00	3.56E-16
Tellurium (52)	Te-134	8.71E+03	7.95E-05	2.09E+02	2.35E+02	1.11E+02	3.30E-15

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Thorium (90)	Th-223	3.64E+07	1.90E-08		3.56E+03	3.56E+03	4.23E-17
Thorium (90)	Th-224	2.08E+07	3.33E-08		3.17E+04	3.17E+04	6.63E-16
Thorium (90)	Th-226	1.19E+04	5.82E-05	4.95E-03	3.51E+04	4.95E-03	1.82E-19
Thorium (90)	Th-227	1.35E+01	5.12E-02	2.62E-03	1.95E+03	2.62E-03	8.53E-17
Thorium (90)	Th-228	3.63E-01	1.91E+00	1.14E-03	5.19E+02	1.14E-03	1.40E-15
Thorium (90)	Th-229	9.44E-05	7.34E+03	5.80E-04	2.77E+03	5.80E-04	2.73E-12
Thorium (90)	Th-230	9.19E-06	7.54E+04	4.32E-04	4.53E+02	4.32E-04	2.10E-11
Thorium (90)	Th-231	2.38E+02	2.91E-03	1.71E-04	1.77E+03	1.71E-04	3.22E-19
Thorium (90)	Th-232	4.93E-11	1.41E+10	6.01E-04	3.34E+02	6.01E-04	5.48E-06
Thorium (90)	Th-233	1.63E+04	4.24E-05	5.23E-04	1.52E+03	5.23E-04	1.45E-20
Thorium (90)	Th-234	1.05E+01	6.60E-02	4.00E-04	4.43E+02	4.00E-04	1.73E-17
Thorium (90)	Th-235	5.13E+04	1.35E-05	1.66E-04	1.20E+03	1.66E-04	1.48E-21
Thorium (90)	Th-236	9.71E+03	7.13E-05	5.44E-04	2.38E+02	5.44E-04	2.57E-20
Titanium (22)	Ti-44	1.16E-02	6.00E+01	4.06E-01	3.62E+02	4.05E-01	3.00E-12
Titanium (22)	Ti-45	1.97E+03	3.52E-04	4.87E+02	9.62E+02	3.23E+02	1.43E-14
Titanium (22)	Ti-51	6.32E+04	1.10E-05		2.19E+03	2.19E+03	3.43E-15
Titanium (22)	Ti-52	2.14E+05	3.23E-06		4.92E+02	4.92E+02	2.32E-16
Thallium (81)	Tl-190	1.40E+05	4.95E-06	5.36E-03	2.05E+02	5.36E-03	1.41E-20
Thallium (81)	Tl-190m	9.84E+04	7.04E-06	5.36E-03	1.60E+02	5.36E-03	2.01E-20
Thallium (81)	Tl-194	1.10E+04	6.28E-05	2.17E+00	4.21E+02	2.16E+00	7.37E-17
Thallium (81)	Tl-194m	1.11E+04	6.24E-05	2.17E+00	2.33E+02	2.15E+00	7.29E-17
Thallium (81)	Tl-195	5.23E+03	1.32E-04	1.47E+01	5.49E+02	1.43E+01	1.03E-15
Thallium (81)	Tl-196	3.30E+03	2.10E-04	1.15E+03	4.26E+02	3.11E+02	3.59E-14
Thallium (81)	Tl-197	2.14E+03	3.24E-04	1.06E+01	1.66E+03	1.05E+01	1.88E-15
Thallium (81)	Tl-198	1.15E+03	6.05E-04	5.92E+02	3.95E+02	2.37E+02	7.95E-14
Thallium (81)	Tl-198m	3.25E+03	2.13E-04	4.40E+02	3.86E+02	2.05E+02	2.43E-14
Thallium (81)	Tl-199	8.18E+02	8.47E-04	9.30E+02	3.64E+03	7.41E+02	3.50E-13
Thallium (81)	Tl-200	2.33E+02	2.98E-03	2.53E+02	6.27E+02	1.80E+02	3.00E-13
Thallium (81)	Tl-201	8.33E+01	8.32E-03	2.46E+02	1.15E+04	2.41E+02	1.13E-12
Thallium (81)	Tl-202	2.07E+01	3.35E-02	1.18E+02	1.89E+03	1.11E+02	2.10E-12
Thallium (81)	Tl-204	1.83E-01	3.78E+00	2.64E+00	2.14E+05	2.64E+00	5.69E-12
Thallium (81)	Tl-206	8.67E+04	7.99E-06		9.45E+04	9.45E+04	4.36E-13
Thallium (81)	Tl-206m	9.74E+04	7.12E-06		3.43E+02	3.43E+02	1.41E-15
Thallium (81)	Tl-207	7.64E+04	9.08E-06		8.14E+04	8.14E+04	4.28E-13
Thallium (81)	Tl-208	1.19E+05	5.81E-06		2.23E+02	2.23E+02	7.55E-16
Thallium (81)	Tl-209	1.69E+05	4.11E-06	7.74E+02	3.67E+02	2.49E+02	6.00E-16
Thallium (81)	Tl-210	2.80E+05	2.47E-06	4.98E-03	2.84E+02	4.98E-03	7.24E-21
Thulium (69)	Tm-161	1.21E+04	5.75E-05	5.20E+02	3.58E+02	2.12E+02	5.49E-15
Thulium (69)	Tm-162	1.68E+04	4.13E-05	2.25E+03	4.10E+02	3.47E+02	6.50E-15
Thulium (69)	Tm-163	3.35E+03	2.07E-04	1.64E+02	6.12E+02	1.30E+02	1.22E-14
Thulium (69)	Tm-164	1.82E+05	3.81E-06		1.05E+03	1.05E+03	1.84E-15
Thulium (69)	Tm-165	2.02E+02	3.43E-03	1.90E+02	1.51E+03	1.69E+02	2.68E-13
Thulium (69)	Tm-166	7.88E+02	8.79E-04	2.48E+02	4.03E+02	1.54E+02	6.27E-14
Thulium (69)	Tm-167	2.73E+01	2.53E-02	3.68E+01	6.83E+03	3.66E+01	4.33E-13
Thulium (69)	Tm-168	2.72E+00	2.55E-01	9.65E+00	6.81E+02	9.52E+00	1.14E-12
Thulium (69)	Tm-170	1.97E+00	3.52E-01	5.35E+00	1.15E+05	5.35E+00	8.98E-13

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Thulium (69)	Tm-171	3.61E-01	1.92E+00	3.89E+01	2.21E+06	3.89E+01	3.57E-11
Thulium (69)	Tm-172	9.55E+01	7.26E-03	3.81E+01	1.64E+03	3.72E+01	1.30E-13
Thulium (69)	Tm-173	7.37E+02	9.41E-04	2.40E+02	2.18E+03	2.16E+02	9.86E-14
Thulium (69)	Tm-174	6.75E+04	1.03E-05		4.66E+02	4.66E+02	2.33E-15
Thulium (69)	Tm-175	2.40E+04	2.89E-05	6.48E+01	7.31E+02	5.96E+01	8.44E-16
Thulium (69)	Tm-176	1.97E+05	3.52E-06		3.99E+02	3.99E+02	6.93E-16
Uranium (92)	U-227	3.31E+05	2.09E-06		2.44E+03	2.44E+03	3.25E-15
Uranium (92)	U-228	4.00E+04	1.73E-05		2.86E+04	2.86E+04	3.16E-13
Uranium (92)	U-230	1.22E+01	5.70E-02	1.90E-03	3.37E+04	1.90E-03	6.95E-17
Uranium (92)	U-231	6.02E+01	1.15E-02	1.71E-04	1.61E+03	1.71E-04	1.27E-18
Uranium (92)	U-232	1.01E-02	6.89E+01	6.27E-04	5.19E+02	6.27E-04	2.81E-14
Uranium (92)	U-233	4.35E-06	1.59E+05	5.23E-04	2.76E+03	5.23E-04	5.43E-11
Uranium (92)	U-234	2.82E-06	2.46E+05	4.00E-04	4.53E+02	4.00E-04	6.43E-11
Uranium (92)	U-235	9.84E-10	7.04E+08	1.66E-04	1.34E+03	1.66E-04	7.69E-08
Uranium (92)	U-235m	1.40E+04	4.95E-05	1.66E-04	1.34E+03	1.66E-04	5.40E-21
Uranium (92)	U-236	2.96E-08	2.34E+07	5.44E-04	3.34E+02	5.44E-04	8.42E-09
Uranium (92)	U-237	3.75E+01	1.85E-02	4.66E-04	1.29E+03	4.66E-04	5.72E-18
Uranium (92)	U-238	1.55E-10	4.47E+09	3.75E-04	4.43E+02	3.75E-04	1.12E-06
Uranium (92)	U-239	1.55E+04	4.46E-05	1.21E-04	1.00E+03	1.21E-04	3.61E-21
Uranium (92)	U-240	4.31E+02	1.61E-03	2.45E-04	2.94E+02	2.45E-04	2.65E-19
Uranium (92)	U-242	2.17E+04	3.20E-05	2.09E-04	3.75E+02	2.09E-04	4.52E-21
Vanadium (23)	V-47	1.12E+04	6.20E-05	1.48E+03	8.34E+02	5.33E+02	4.35E-15
Vanadium (23)	V-48	1.58E+01	4.38E-02	1.75E+01	2.76E+02	1.64E+01	9.68E-14
Vanadium (23)	V-49	7.67E-01	9.04E-01	6.78E+02		6.78E+02	8.41E-11
Vanadium (23)	V-50	4.62E-18	1.50E+17	8.08E-01	5.46E+02	8.07E-01	1.69E+04
Vanadium (23)	V-52	9.73E+04	7.12E-06		5.32E+02	5.32E+02	5.52E-16
Vanadium (23)	V-53	2.26E+05	3.06E-06		7.61E+02	7.61E+02	3.46E-16
Tungsten (74)	W-177	2.76E+03	2.51E-04	3.10E+02	8.92E+02	2.30E+02	2.87E-14
Tungsten (74)	W-178	1.17E+01	5.92E-02	5.82E+01	7.28E+03	5.77E+01	1.70E-12
Tungsten (74)	W-179	9.83E+03	7.05E-05	9.87E+01	1.75E+04	9.82E+01	3.47E-15
Tungsten (74)	W-179m	5.69E+04	1.22E-05	9.87E+01	9.08E+03	9.76E+01	5.96E-16
Tungsten (74)	W-181	2.09E+00	3.32E-01	1.66E+02	3.26E+04	1.65E+02	2.78E-11
Tungsten (74)	W-185	3.37E+00	2.06E-01	1.27E+01	7.56E+05	1.27E+01	1.36E-12
Tungsten (74)	W-185m	2.28E+05	3.04E-06	1.27E+01	3.82E+04	1.27E+01	2.01E-17
Tungsten (74)	W-187	2.56E+02	2.71E-03	1.03E+02	1.88E+03	9.75E+01	1.38E-13
Tungsten (74)	W-188	3.62E+00	1.91E-01	3.03E+00	1.10E+04	3.02E+00	3.04E-13
Tungsten (74)	W-190	1.21E+04	5.71E-05	6.33E+02	5.67E+02	2.99E+02	9.08E-15
Xenon (54)	Xe-120	9.11E+03	7.61E-05	1.67E+02	2.60E+02	1.02E+02	2.60E-15
Xenon (54)	Xe-121	9.08E+03	7.63E-05	7.05E+01	3.36E+02	5.83E+01	1.51E-15
Xenon (54)	Xe-122	3.02E+02	2.29E-03		8.14E+02	8.14E+02	6.38E-13
Xenon (54)	Xe-123	2.92E+03	2.37E-04	1.28E+01	1.07E+03	1.27E+01	1.04E-15
Xenon (54)	Xe-125	3.59E+02	1.93E-03	3.28E+00	3.36E+03	3.27E+00	2.21E-15
Xenon (54)	Xe-127	6.95E+00	9.97E-02		3.32E+03	3.32E+03	1.18E-10
Xenon (54)	Xe-127m	3.16E+05	2.19E-06		2.10E+03	2.10E+03	1.64E-15
Xenon (54)	Xe-129m	2.85E+01	2.43E-02		4.09E+04	4.09E+04	3.59E-10
Xenon (54)	Xe-131m	2.14E+01	3.24E-02		1.05E+05	1.05E+05	1.25E-09

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation	Submersion	Total	Total
				BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (pCi/m ³)	BDCC (no decay) DL=1 (mg/m ³)
Xenon (54)	Xe-133	4.82E+01	1.44E-02		2.74E+04	2.74E+04	1.46E-10
Xenon (54)	Xe-133m	1.16E+02	6.00E-03		1.41E+04	1.41E+04	3.15E-11
Xenon (54)	Xe-135	6.64E+02	1.04E-03	4.32E+00	3.40E+03	4.32E+00	1.70E-15
Xenon (54)	Xe-135m	2.38E+04	2.91E-05	4.32E+00	1.26E+03	4.31E+00	4.74E-17
Xenon (54)	Xe-137	9.54E+04	7.26E-06	1.30E+00	1.05E+03	1.29E+00	3.61E-18
Xenon (54)	Xe-138	2.59E+04	2.68E-05	1.00E+03	2.21E+02	1.81E+02	1.87E-15
Yttrium (39)	Y-81	3.10E+05	2.23E-06	4.42E+02	2.61E+02	1.64E+02	8.30E-17
Yttrium (39)	Y-83	5.14E+04	1.35E-05	2.72E+01	3.12E+02	2.50E+01	7.83E-17
Yttrium (39)	Y-83m	1.28E+05	5.42E-06	2.72E+01	3.10E+02	2.50E+01	3.15E-17
Yttrium (39)	Y-84m	9.22E+03	7.52E-05	7.21E+02	2.04E+02	1.59E+02	2.81E-15
Yttrium (39)	Y-85	2.27E+03	3.06E-04	5.88E+01	4.88E+02	5.25E+01	3.82E-15
Yttrium (39)	Y-85m	1.25E+03	5.55E-04	4.82E+01	4.47E+02	4.35E+01	5.75E-15
Yttrium (39)	Y-86	4.12E+02	1.68E-03	9.50E+01	2.23E+02	6.66E+01	2.70E-14
Yttrium (39)	Y-86m	7.59E+03	9.13E-05	9.02E+01	2.13E+02	6.33E+01	1.39E-15
Yttrium (39)	Y-87	7.61E+01	9.11E-03	1.00E+02	1.12E+03	9.19E+01	2.04E-13
Yttrium (39)	Y-87m	4.54E+02	1.53E-03	7.75E+01	8.07E+02	7.07E+01	2.63E-14
Yttrium (39)	Y-88	2.37E+00	2.92E-01	7.85E+00	2.89E+02	7.64E+00	5.50E-13
Yttrium (39)	Y-89m	1.40E+06	4.97E-07		9.02E+02	9.02E+02	1.12E-16
Yttrium (39)	Y-90	9.47E+01	7.32E-03	3.05E+01	4.74E+04	3.05E+01	5.63E-14
Yttrium (39)	Y-90m	1.90E+03	3.64E-04	2.86E+01	1.30E+03	2.80E+01	2.57E-15
Yttrium (39)	Y-91	4.32E+00	1.60E-01	5.45E+00	6.24E+04	5.45E+00	2.23E-13
Yttrium (39)	Y-91m	7.33E+03	9.46E-05	5.45E+00	1.55E+03	5.43E+00	1.31E-16
Yttrium (39)	Y-92	1.71E+03	4.04E-04	2.51E+02	2.84E+03	2.31E+02	2.40E-14
Yttrium (39)	Y-93	5.96E+02	1.16E-03	2.20E+00	6.66E+03	2.20E+00	6.66E-16
Yttrium (39)	Y-94	1.95E+04	3.56E-05	1.64E+03	9.82E+02	6.15E+02	5.76E-15
Yttrium (39)	Y-95	3.54E+04	1.96E-05	6.41E+00	2.99E+02	6.27E+00	3.27E-17
Ytterbium (70)	Yb-162	1.93E+04	3.59E-05	1.20E+03	3.70E+02	2.83E+02	4.61E-15
Ytterbium (70)	Yb-163	3.30E+04	2.10E-05	1.59E+02	3.98E+02	1.14E+02	1.09E-15
Ytterbium (70)	Yb-164	4.81E+03	1.44E-04	1.02E+03	1.01E+03	5.06E+02	3.35E-14
Ytterbium (70)	Yb-165	3.68E+04	1.88E-05	1.90E+02	9.72E+02	1.59E+02	1.38E-15
Ytterbium (70)	Yb-166	1.07E+02	6.47E-03	4.88E+01	3.93E+02	4.34E+01	1.31E-13
Ytterbium (70)	Yb-167	2.08E+04	3.33E-05	3.66E+01	2.49E+03	3.60E+01	5.61E-16
Ytterbium (70)	Yb-169	7.90E+00	8.77E-02	1.44E+01	3.15E+03	1.43E+01	5.94E-13
Ytterbium (70)	Yb-175	6.04E+01	1.15E-02	6.67E+01	2.17E+04	6.64E+01	3.73E-13
Ytterbium (70)	Yb-177	3.18E+03	2.18E-04	3.85E+01	3.54E+03	3.81E+01	4.12E-15
Ytterbium (70)	Yb-178	4.92E+03	1.41E-04	4.67E+02	4.57E+03	4.24E+02	2.97E-14
Ytterbium (70)	Yb-179	4.55E+04	1.52E-05	4.16E+02	8.22E+02	2.76E+02	2.11E-15
Zinc (30)	Zn-60	1.53E+05	4.53E-06	1.28E+03	1.46E+02	1.31E+02	9.96E-17
Zinc (30)	Zn-61	2.45E+05	2.83E-06	5.99E+02	3.43E+02	2.18E+02	1.05E-16
Zinc (30)	Zn-62	6.61E+02	1.05E-03	8.21E+01	5.74E+02	7.19E+01	1.31E-14
Zinc (30)	Zn-63	9.47E+03	7.32E-05	1.22E+03	7.52E+02	4.65E+02	6.01E-15
Zinc (30)	Zn-65	1.04E+00	6.69E-01	2.11E+01	1.38E+03	2.08E+01	2.53E-12
Zinc (30)	Zn-69	6.46E+03	1.07E-04	1.68E+03	1.88E+05	1.66E+03	3.45E-14
Zinc (30)	Zn-69m	4.41E+02	1.57E-03	1.52E+02	2.02E+03	1.42E+02	4.29E-14
Zinc (30)	Zn-71	1.49E+05	4.66E-06		2.47E+03	2.47E+03	2.29E-15
Zinc (30)	Zn-71m	1.53E+03	4.52E-04	2.76E+02	5.33E+02	1.82E+02	1.63E-14

Indoor Worker Air BDCCs October 2024							
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)			
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Inhalation BDCC (no decay) DL=1 (pCi/m ³)	Submersion BDCC (no decay) DL=1 (pCi/m ³)	Total BDCC (no decay) DL=1 (pCi/m ³)	Total BDCC (no decay) DL=1 (mg/m ³)
Zinc (30)	Zn-72	1.31E+02	5.31E-03	2.43E+01	2.73E+02	2.23E+01	2.39E-14
Zirconium (40)	Zr-85	4.63E+04	1.50E-05	4.85E+01	2.48E+02	4.06E+01	1.44E-16
Zirconium (40)	Zr-86	3.68E+02	1.88E-03	4.94E+01	2.08E+02	3.99E+01	1.81E-14
Zirconium (40)	Zr-87	3.61E+03	1.92E-04	6.72E+01	4.23E+02	5.80E+01	2.71E-15
Zirconium (40)	Zr-88	3.03E+00	2.28E-01	4.97E+00	2.55E+02	4.87E+00	2.74E-13
Zirconium (40)	Zr-89	7.74E+01	8.95E-03	8.35E+01	7.09E+02	7.47E+01	1.67E-13
Zirconium (40)	Zr-89m	8.75E+04	7.92E-06	8.91E+01	4.78E+02	7.51E+01	1.48E-16
Zirconium (40)	Zr-93	4.53E-07	1.53E+06	2.25E+00	1.27E+07	2.25E+00	8.96E-07
Zirconium (40)	Zr-95	3.95E+00	1.75E-01	6.42E+00	5.50E+02	6.35E+00	2.96E-13
Zirconium (40)	Zr-97	3.63E+02	1.91E-03	4.42E+01	5.28E+02	4.08E+01	2.12E-14

Indoor Worker 3-D BDCCs October 2024																			
Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)													
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	External Exposure Soil Volume (yrs)	External Exposure Soil Volume 1cm (yrs)	External Exposure Soil Volume 5cm (yrs)	External Exposure Soil Volume 15cm (yrs)	External Exposure Ground Plane (yrs)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/cm ²)
Actinium (89)	Ac-223	1.73E+05	4.00E-06	3.43E+19	3.96E+19	1.41E+19	4.98E+19	8.64E+19	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.56E+04	9.88E+04	3.53E+04	1.24E+05	2.16E+05
Actinium (89)	Ac-224	2.18E+03	3.17E-04	1.96E+02	4.94E+02	1.34E+02	1.16E+02	1.46E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.90E+11	9.83E-11	2.66E-11	2.32E-11	2.90E-10
Actinium (89)	Ac-225	2.53E+01	2.74E-02	4.76E+01	9.60E+01	2.96E+01	3.07E+01	2.51E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.22E-10	1.66E-09	5.11E-10	5.29E-10	4.33E-09
Actinium (89)	Ac-226	2.07E+02	3.35E-03	5.57E+02	7.02E+02	2.25E+02	6.35E+02	2.40E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.18E-09	1.49E-09	4.78E-10	1.35E-09	5.09E-09
Actinium (89)	Ac-227	3.18E-02	2.18E+01	8.01E-01	1.04E+00	3.46E-01	1.24E+00	4.60E+00	2.93E-01	2.91E-01	2.90E-01	3.02E-01	2.99E-01	1.11E-08	1.44E-08	4.78E-09	1.71E-08	6.36E-08	
Actinium (89)	Ac-228	9.87E+02	7.02E-04	1.23E+02	1.63E+02	7.28E+01	9.11E+01	8.99E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.51E-11	1.18E-10	3.26E-11	4.08E-11	4.03E-10	
Actinium (89)	Ac-230	1.79E+05	3.87E-06	2.73E+09	7.93E+09	1.97E+09	1.58E+09	2.17E+10	8.94E+03	8.94E+03	8.94E+03	8.94E+03	8.94E+03	6.79E-06	1.98E-05	4.91E-06	3.94E-06	5.42E-05	
Actinium (89)	Ac-231	4.86E+04	1.43E-05	9.56E+05	8.31E+05	3.09E+05	2.84E+06	3.86E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.82E-09	7.67E-09	2.85E-09	2.62E-08	3.56E-08	
Actinium (89)	Ac-232	1.84E+05	3.77E-06	2.49E+14	6.11E+14	1.64E+14	1.60E+14	1.92E+15	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	6.10E-01	1.50E+00	4.02E-01	3.92E-01	4.70E+00	
Actinium (89)	Ac-233	1.51E+05	4.60E-06	1.17E+05	1.63E+05	4.82E+04	1.80E+05	7.31E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.50E-10	4.89E-10	1.44E-10	5.40E-10	2.19E-09	
Silver (47)	Ag-100m	1.63E+05	4.26E-06	6.11E+03	1.31E+04	2.99E+03	3.96E+03	4.64E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.30E-12	1.56E-11	3.57E-12	4.73E-12	5.54E-11	
Silver (47)	Ag-101	3.28E+04	2.11E-05	6.96E+03	1.39E+04	2.57E+03	1.24E+04	6.31E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.15E-11	8.33E-11	1.53E-11	7.39E-11	3.77E-10	
Silver (47)	Ag-102	2.82E+04	2.45E-05	3.94E+11	1.01E+12	2.34E+11	2.06E+11	2.99E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.76E-03	7.07E-03	1.64E-03	1.44E-03	2.09E-02	
Silver (47)	Ag-102m	4.73E+04	1.46E-05	5.54E+11	1.42E+12	3.29E+11	2.89E+11	4.19E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.32E-03	5.92E-03	1.38E-03	1.21E-03	1.75E-02	
Silver (47)	Ag-103	5.54E+03	1.25E-04	1.15E+03	2.04E+03	4.72E+02	1.09E+03	8.68E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.14E-11	7.35E-11	1.70E-11	3.91E-11	2.47E-10	
Silver (47)	Ag-104	5.28E+03	1.32E-04	1.88E+02	3.81E+02	8.47E+01	1.01E+02	1.27E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.20E-12	1.46E-11	3.25E-12	3.89E-12	4.89E-11	
Silver (47)	Ag-104m	1.09E+04	6.37E-05	1.39E+03	2.89E+03	6.65E+02	7.05E+02	9.33E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.58E-11	5.36E-11	1.23E-11	1.31E-11	1.73E-10	
Silver (47)	Ag-105	6.13E+00	1.13E-01	1.70E+00	3.32E+00	7.14E-01	1.75E+00	1.19E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.67E-11	1.11E-10	2.37E-11	5.82E-11	3.96E-10	
Silver (47)	Ag-105m	5.04E+04	1.38E-05	1.41E+04	2.74E+04	5.89E+03	1.44E+04	9.83E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.69E-11	1.11E-10	2.38E-11	5.84E-11	3.97E-10	
Silver (47)	Ag-106	1.52E+04	4.56E-05	4.48E+09	1.05E+10	1.97E+09	7.19E+09	4.39E+10	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.06E-05	1.42E-04	2.66E-05	9.73E-05	5.93E-04	
Silver (47)	Ag-106m	3.05E+01	2.27E-02	8.79E-01	1.79E+00	4.11E-01	4.66E-01	5.83E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.91E-12	1.20E-11	2.77E-12	3.14E-12	3.92E-11	
Silver (47)	Ag-108	1.54E+05	4.51E-06	3.46E+20	5.42E+20	1.37E+20	2.65E+20	6.31E+20	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.72E+05	7.39E+05	1.86E+05	3.61E+05	8.61E+05	
Silver (47)	Ag-108m	1.66E-03	4.18E+02	6.43E-02	1.25E-01	2.84E-02	3.32E-02	4.20E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.13E-09	1.52E-08	3.59E-09	4.19E-09	5.31E-08	
Silver (47)	Ag-109m	5.52E+05	1.26E-06	2.56E+23	2.93E+23	7.31E+22	6.58E+23	6.98E+23	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.81E+07	1.12E+08	2.80E+07	2.52E+08	2.67E+08	
Silver (47)	Ag-110	8.88E+05	7.80E-07	2.77E+24	6.03E+24	1.78E+24	1.49E+24	6.60E+24	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.65E+08	1.45E+09	4.27E+08	3.57E+08	1.59E+09	
Silver (47)	Ag-110m	1.01E+00	6.84E-01	4.99E-02	1.56E-01	3.54E-02	2.86E-02	4.53E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.05E-11	3.29E-11	7.47E-12	6.02E-12	9.55E-11	
Silver (47)	Ag-111	3.40E+01	2.04E-02	5.23E+03	1.39E+04	3.74E+03	3.43E+03	1.60E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.32E-08	8.81E-08	2.37E-08	2.18E-08	1.02E-07	
Silver (47)	Ag-111m	3.37E+05	2.05E-06	5.23E+07	1.39E+08	3.74E+07	3.43E+07	1.60E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.34E-08	8.88E-08	2.39E-08	2.19E-08	1.02E-07	
Silver (47)	Ag-112	1.94E+03	3.57E-04	9.64E+02	3.30E+03	7.77E+02	5.36E+02	8.16E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.08E-10	3.70E-10	8.71E-11	6.00E-11	9.15E-10	
Silver (47)	Ag-113	1.13E+03	6.13E-04	2.58E+04	6.71E+04	1.81E+04	1.71E+04	8.07E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.01E-09	1.30E-08	3.51E-09	3.32E-09	1.56E-08	
Silver (47)	Ag-113m	3.18E+05	2.18E-06	1.13E+07	2.94E+07	7.93E+06	7.50E+06	3.54E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.80E-09	2.03E-08	5.47E-09	5.17E-09	2.44E-08	
Silver (47)	Ag-114	4.75E+06	1.46E-07	3.67E+27	9.99E+27	2.77E+27	1.81E+27	1.99E+28	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.71E+11	4.65E+11	1.29E+11	8.41E+10	9.26E+11	
Silver (47)	Ag-115	1.82E+04	3.81E-05	2.65E+04	6.09E+04	1.23E+04	2.24E+04	1.91E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.25E-10	7.46E-10	1.50E-10	2.74E-10	2.35E-09	
Silver (47)	Ag-116	1.36E+05	5.10E-06	1.67E+16	5.30E+16	1.34E+16	9.07E+15	1.39E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.76E+01	8.78E+01	2.22E+01	1.50E+01	2.30E+02	
Silver (47)	Ag-117	2.97E+05	2.33E-06	3.72E+04	9.83E+04	2.42E+04	2.24E+04	2.52E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.84E-11	7.52E-11	1.85E-11	1.71E-11	1.92E-10	
Silver (47)	Ag-99	1.78E+05	3.93E-06	4.40E+04	8.83E+04	1.75E+04	4.22E+04	3.28E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.80E-11	9.62E-11	1.91E-11	4.60E-11	3.58E-10	
Aluminum (13)	Al-26	9.67E-07	7.17E+05	9.40E-02	3.74E-01	9.13E-02	7.85E-02	9.43E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.91E-06	1.95E-05	4.77E-06	4.10E-06	4.92E-05
Aluminum (13)	Al-28	1.63E+05	4.26E-06	2.15E+17	8.99E+17	2.20E+17	1.90E+17	2.17E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.18E+01	3.00E+02	7.35E+01	6.34E+01	7.24E+02	
Aluminum (13)	Al-29	5.55E+04	1.25E-05	1.75E+14	4.58E+14	1.08E+14	8.31E+13	1.33E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.77E-01	4.64E-01	1.10E-01	8.42E-02	1.35E+00	
Americium (95)	Am-237	4.99E+03	1.39E-04	1.67E+03	2.43E+03	6.65E+02	2.12E+03	9.19E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.55E-10	2.24E-10	6.13E-11	1.96E-10	8.47E-10	
Americium (95)	Am-238	3.72E+03	1.86E-04	4.76E+02	8.39E+02	2.25E+02	5.22E+02	3.16E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.92E-11	1.04E-10	2.79E-11	6.49E-11	3.93E-10	
Americium (95)	Am-239	5.10E+02	1.36E-03	2.47E+02	2.94E+02	8.53E+01	4.38E+02	1.25E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.24E-10	2.67E-10	7.76E-11	3.98E-10	1.14E-09	
Americium (95)	Am-240	1.20E+02	5.80E-03	1.08E+01	1.90E+01	4.99E+00	1.43E+01	7.92E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.20E-11	7.40E-11	1.94E-11	5.55E-11	3.09E-10	
Americium (95)	Am-241	1.60E+03	4.32E+02	9.77E+01	6.36E+01	1.76E+01	9.52E+01	7.00E+01	1.00E-08										

Indoor Worker 3-D BDCCs October 2024																				
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)																
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	
				BDCC	1cm BDCC	5cm BDCC	15cm BDCC	Plane	Start Time	Start Time	Start Time	Start Time	Start Time	BDCC	1cm BDCC	5cm BDCC	15cm BDCC	Plane	DL=1	DL=1
				(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)	DL=1	External Exposure	External Exposure	External Exposure	External Exposure	External Exposure	External Exposure	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	DL=1	(mg/cm ²)
Arsenic (33)	As-78	4.02E+03	1.73E-04	6.05E+02	1.95E+03	4.58E+02	3.26E+02	5.22E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.28E-11	7.36E-11	1.72E-11	1.23E-11	1.97E-10	
Arsenic (33)	As-79	4.04E+04	1.71E-05	1.03E+16	8.10E+15	3.64E+15	1.54E+16	4.05E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.90E+01	3.07E+01	1.38E+01	5.83E+01	1.54E+02	
Astatine (85)	At-204	3.96E+04	1.75E-05	7.06E+02	1.23E+03	3.76E+02	5.10E+02	4.01E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.06E-12	1.23E-11	3.76E-12	5.10E-12	4.01E-11	
Astatine (85)	At-205	1.39E+04	4.98E-05	5.72E+02	9.36E+02	2.81E+02	4.04E+02	2.99E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.64E-11	2.68E-11	8.05E-12	1.16E-11	8.55E-11	
Astatine (85)	At-206	1.19E+04	5.82E-05	1.94E+02	3.46E+02	1.03E+02	1.27E+02	1.10E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.50E-12	1.16E-11	3.46E-12	4.27E-12	3.68E-11	
Astatine (85)	At-207	3.37E+03	2.05E-04	1.10E+02	1.85E+02	5.53E+01	7.15E+01	5.81E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.31E-11	2.20E-11	6.58E-12	8.52E-12	6.92E-11	
Astatine (85)	At-208	3.72E+03	1.86E-04	7.37E+01	1.50E+02	4.14E+01	4.57E+01	4.55E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.98E-12	1.63E-11	4.49E-12	4.96E-12	4.93E-11	
Astatine (85)	At-209	1.12E+03	6.18E-04	3.73E+01	5.90E+01	1.75E+01	2.18E+01	1.85E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.35E-11	2.13E-11	6.31E-12	7.89E-12	6.68E-11	
Astatine (85)	At-210	7.49E+02	9.25E-04	2.10E+01	3.58E+01	1.06E+01	1.38E+01	1.17E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.14E-11	1.95E-11	5.74E-12	7.49E-12	6.39E-11	
Astatine (85)	At-211	8.42E+02	8.24E-04	5.38E+03	7.02E+03	2.45E+03	4.02E+03	2.45E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.62E-09	3.42E-09	1.19E-09	1.95E-09	1.19E-08	
Astatine (85)	At-215	2.19E+11	3.17E-12	5.26E+25	1.04E+26	3.20E+25	3.44E+25	1.47E+26	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E+05	1.99E+05	6.11E+04	6.56E+04	2.81E+05	
Astatine (85)	At-216	7.28E+10	9.51E-12	2.96E+11	9.22E+11	2.31E+11	1.62E+11	2.54E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.70E-09	5.30E-09	1.33E-09	9.35E-10	1.46E-08	
Astatine (85)	At-217	6.77E+08	1.02E-09	3.68E+11	7.86E+11	2.39E+11	2.29E+11	1.94E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.29E-07	4.89E-07	1.49E-07	1.42E-07	1.21E-06	
Astatine (85)	At-218	1.46E+07	4.76E-08																	
Astatine (85)	At-219	3.90E+05	1.78E-06																	
Astatine (85)	At-220	9.82E+04	7.06E-06	9.94E+03	2.94E+04	7.53E+03	5.52E+03	8.18E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.32E-11	1.28E-10	3.28E-11	2.40E-11	3.56E-10	
Gold (79)	Au-186	3.40E+04	2.04E-05	1.99E+03	2.86E+03	8.76E+02	1.37E+03	9.26E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.11E-11	3.03E-11	9.29E-12	1.45E-11	9.82E-11	
Gold (79)	Au-187	4.34E+04	1.60E-05	7.04E+03	6.95E+03	2.72E+03	7.05E+03	2.71E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.89E-11	5.82E-11	2.28E-11	5.90E-11	2.27E-10	
Gold (79)	Au-190	8.51E+03	8.14E-05	3.90E+02	8.35E+02	2.31E+02	2.86E+02	2.35E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.69E-11	3.62E-11	1.00E-11	1.24E-11	1.02E-10	
Gold (79)	Au-191	1.91E+03	3.63E-04	3.49E+02	3.54E+02	1.36E+02	2.90E+02	1.31E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.78E-11	6.88E-11	2.64E-11	5.62E-11	2.53E-10	
Gold (79)	Au-192	1.23E+03	5.64E-04	7.63E+01	1.54E+02	4.30E+01	5.71E+01	4.32E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.31E-11	4.67E-11	1.30E-11	1.73E-11	1.31E-10	
Gold (79)	Au-193	3.44E+02	2.01E-03	5.95E+02	4.65E+02	1.99E+02	6.96E+02	1.74E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.48E-10	5.06E-10	2.17E-10	7.58E-10	1.89E-09	
Gold (79)	Au-193m	5.60E+06	1.24E-07	9.70E+06	7.58E+06	3.25E+06	1.13E+07	2.83E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.48E-10	5.06E-10	2.17E-10	7.58E-10	1.89E-09	
Gold (79)	Au-194	1.60E+02	4.34E-03	2.40E+01	3.95E+01	1.21E+01	1.86E+01	1.19E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.65E-11	9.30E-11	2.86E-11	4.39E-11	2.80E-10	
Gold (79)	Au-195	1.36E+00	5.10E-01	9.23E+00	4.77E+00	2.43E+00	1.48E+01	2.03E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.57E-09	1.33E-09	6.76E-10	4.12E-09	5.65E-09	
Gold (79)	Au-195m	7.17E+05	9.67E-07	4.86E+06	2.52E+06	1.28E+06	7.80E+06	1.07E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.57E-09	1.33E-09	6.76E-10	4.12E-09	5.65E-09	
Gold (79)	Au-196	4.09E+01	1.69E-02	1.69E+01	2.37E+01	7.74E+00	1.25E+01	6.90E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.57E-10	2.20E-10	7.20E-11	1.17E-10	6.42E-10	
Gold (79)	Au-196m	6.32E+02	1.10E-03	1.51E+02	1.60E+02	6.02E+01	1.41E+02	6.02E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.11E-11	9.61E-11	3.62E-11	8.49E-11	3.62E-10	
Gold (79)	Au-198	9.39E+01	7.38E-03	8.68E+01	2.06E+02	5.81E+01	4.46E+01	5.11E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.55E-10	8.44E-10	2.38E-10	1.82E-10	2.09E-09	
Gold (79)	Au-198m	1.11E+02	6.22E-03	2.09E+01	2.33E+01	7.67E+00	1.60E+01	7.45E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.19E-11	8.02E-11	2.64E-11	5.51E-11	2.57E-10	
Gold (79)	Au-199	8.06E+01	8.60E-03	5.07E+02	4.23E+02	1.76E+02	3.58E+02	1.67E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.43E-09	2.03E-09	8.43E-10	1.72E-09	8.00E-09	
Gold (79)	Au-200	7.53E+03	9.21E-05	2.53E+04	6.14E+04	1.65E+04	1.32E+04	1.32E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.31E-09	3.17E-09	8.52E-10	6.79E-10	6.81E-09	
Gold (79)	Au-200m	3.25E+02	2.13E-03	1.15E+01	2.66E+01	7.24E+00	6.74E+00	7.09E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.37E-11	3.18E-11	8.65E-12	8.06E-12	8.48E-11	
Gold (79)	Au-201	1.40E+04	4.95E-05	1.19E+11	1.23E+11	4.96E+10	1.09E+11	3.18E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.32E-03	3.42E-03	1.38E-03	3.05E-03	8.86E-03	
Gold (79)	Au-202	7.59E+05	9.13E-07	1.16E+23	8.08E+23	8.07E+22	6.08E+22	5.17E+23	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.97E+07	1.44E+08	4.17E+07	3.14E+07	2.67E+08	
Barium (56)	Ba-124	3.31E+04	2.09E-05	9.47E+12	2.34E+13	4.72E+12	1.07E+13	6.70E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.88E-02	1.70E-01	3.43E-02	7.81E-02	4.87E-01	
Barium (56)	Ba-126	3.64E+03	1.90E-04	5.33E+02	1.26E+03	2.63E+02	4.91E+02	3.78E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.57E-11	8.47E-11	1.77E-11	3.30E-11	2.54E-10	
Barium (56)	Ba-127	2.87E+04	2.42E-05	6.07E+03	1.35E+04	2.77E+03	7.88E+03	4.21E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.21E-11	1.16E-10	2.38E-11	6.77E-11	3.62E-10	
Barium (56)	Ba-128	1.04E+02	6.66E-03	4.38E+01	1.09E+02	2.27E+01	5.00E+01	3.37E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.04E-10	2.61E-10	5.41E-11	1.19E-10	8.05E-10	
Barium (56)	Ba-129	6.72E+03	2.55E-04	6.91E+02	1.87E+03	3.55E+02	1.50E+03	6.24E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.35E-11	1.72E-10	3.26E-11	1.38E-10	5.73E-10	
Barium (56)	Ba-129m	2.81E+03	2.47E-04	1.44E+02	3.27E+02	6.82E+01	1.24E+02	9.89E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.28E-11	2.92E-11	6.07E-12	1.11E-11	8.81E-11	
Barium (56)	Ba-131	2.20E+01	3.15E-02	5.54E+00	1.26E+01	2.60E+00	6.65E+00	3.83E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.40E-11	1.45E-10	3.01E-11	7.69E-11	4.42E-10	
Barium (56)	Ba-131m	2.49E+04	2.78E-05																	

Indoor Worker 3-D BDCCs October 2024																				
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)																
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/cm ²)	
Bismuth (83)	Bi-213	7.99E+03	8.67E-05	1.60E+04	3.42E+04	1.04E+04	9.96E+03	8.45E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.30E-10	1.77E-09	5.40E-10	5.15E-10	4.37E-09	
Bismuth (83)	Bi-214	1.83E+04	3.79E-05	5.97E+08	2.29E+08	1.63E+08	1.52E+09	9.81E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.35E-05	5.19E-06	3.69E-06	3.45E-05	2.23E-05	
Bismuth (83)	Bi-215	4.79E+04	1.45E-05	1.14E+06	2.30E+06	6.81E+05	6.69E+05	4.67E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.90E-09	2.00E-08	5.92E-09	5.82E-09	4.07E-08	
Bismuth (83)	Bi-216	1.68E+05	4.13E-06	1.70E+04	5.02E+04	1.29E+04	9.44E+03	1.40E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.24E-11	1.25E-10	3.22E-11	2.36E-11	3.49E-10	
Berkelium (97)	Bk-245	5.12E+01	1.35E-02	3.33E+01	4.29E+01	1.14E+01	4.75E+01	1.59E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.09E-10	3.98E-10	1.06E-10	4.41E-10	1.47E-09	
Berkelium (97)	Bk-246	1.41E+02	4.93E-03	1.58E+01	2.78E+01	6.95E+00	2.10E+01	1.18E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.37E-11	9.43E-11	2.36E-11	7.12E-11	3.99E-10	
Berkelium (97)	Bk-247	5.02E-04	1.38E+03	2.83E+00	3.38E+00	1.04E+00	2.53E+00	1.01E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.70E-06	3.22E-06	9.97E-07	2.41E-06	9.61E-06	
Berkelium (97)	Bk-248m	2.56E+02	2.71E-03	2.17E+03	3.07E+03	7.82E+02	4.34E+03	1.21E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.08E-09	5.77E-09	1.47E-09	8.16E-09	2.27E-08	
Berkelium (97)	Bk-249	7.67E-01	9.04E-01	3.51E+02	5.93E+02	1.56E+02	2.62E+02	2.04E+03	7.39E+00	7.41E+00	7.40E+00	7.38E+00	7.40E+00	7.41E+00	2.21E-07	3.74E-07	9.86E-08	1.65E-07	1.28E-06	
Berkelium (97)	Bk-250	1.89E+03	3.67E-04	5.19E+02	1.04E+03	2.58E+02	4.09E+02	3.82E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.33E-10	2.67E-10	6.63E-11	1.05E-10	9.80E-10	
Berkelium (97)	Bk-251	6.55E+03	1.06E-04	2.02E+04	2.36E+04	6.33E+03	3.82E+04	8.21E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.50E-09	1.76E-09	4.70E-10	2.84E-09	6.10E-09	
Bromine (35)	Br-72	2.78E+05	2.49E-06	5.04E+04	9.97E+04	2.56E+04	2.75E+04	3.13E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.53E-11	5.01E-11	1.29E-11	1.38E-11	1.57E-10	
Bromine (35)	Br-73	1.07E+05	6.47E-06	1.70E+04	3.36E+04	1.15E+04	2.01E+04	1.06E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.35E-11	4.45E-11	1.52E-11	2.66E-11	1.41E-10	
Bromine (35)	Br-74	1.43E+04	4.83E-05	8.10E+07	2.57E+08	6.15E+07	4.77E+07	7.31E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.11E-07	2.57E-06	6.16E-07	4.77E-07	7.32E-06	
Bromine (35)	Br-74m	7.92E+03	8.75E-05	1.89E+02	5.97E+02	1.41E+02	1.08E+02	1.75E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.42E-12	1.08E-11	2.56E-12	1.95E-12	3.17E-11	
Bromine (35)	Br-75	3.77E+03	1.84E-04	5.15E+02	7.89E+02	2.66E+02	3.80E+02	2.69E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.99E-11	3.05E-11	1.03E-11	1.47E-11	1.04E-10	
Bromine (35)	Br-76	3.75E+02	1.85E-03	2.05E+01	4.44E+01	1.24E+01	1.10E+01	1.46E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.07E-12	1.75E-11	4.87E-12	4.32E-12	5.74E-11	
Bromine (35)	Br-76m	1.67E+07	4.15E-08	9.16E+05	1.99E+06	5.53E+05	4.90E+05	6.51E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.10E-12	1.76E-11	4.89E-12	4.33E-12	5.76E-11	
Bromine (35)	Br-77	1.06E+02	6.51E-03	6.01E+01	7.08E+01	2.75E+01	6.96E+01	4.19E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.44E-11	9.94E-11	3.86E-11	9.77E-11	5.88E-10	
Bromine (35)	Br-77m	8.51E+04	8.14E-06	4.80E+04	5.65E+04	2.20E+04	5.56E+04	3.35E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.43E-11	9.93E-11	3.86E-11	9.76E-11	5.88E-10	
Bromine (35)	Br-78	5.64E+04	1.23E-05	1.31E+15	2.05E+15	7.01E+14	7.40E+14	8.17E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.51E+00	5.50E+00	1.88E+00	1.99E+00	2.19E+01	
Bromine (35)	Br-80	2.06E+04	3.36E-05	4.32E+13	5.23E+13	2.11E+13	2.54E+13	1.37E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.26E-01	3.94E-01	1.59E-01	1.91E-01	1.03E+00	
Bromine (35)	Br-80m	1.37E+03	5.05E-04	2.84E+04	2.12E+04	1.22E+04	2.29E+04	6.05E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.21E-09	2.39E-09	1.38E-09	2.58E-09	6.84E-09	
Bromine (35)	Br-82	1.72E+02	4.03E-03	6.04E+00	1.75E+01	4.09E+00	3.10E+00	5.02E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.59E-12	1.62E-11	3.78E-12	2.87E-12	4.64E-11	
Bromine (35)	Br-82m	5.94E+04	1.17E-05	2.13E+03	6.17E+03	1.44E+03	1.10E+03	1.77E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.71E-12	1.65E-11	3.87E-12	2.93E-12	4.74E-11	
Bromine (35)	Br-83	2.53E+03	2.74E-04	7.02E+06	1.66E+07	5.49E+06	3.86E+06	1.12E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.47E-07	1.05E-06	3.50E-07	2.46E-07	7.13E-07	
Bromine (35)	Br-84	1.15E+04	6.05E-05	1.79E+03	5.58E+03	1.31E+03	1.09E+03	1.50E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.55E-11	7.94E-11	1.87E-11	1.56E-11	2.13E-10	
Bromine (35)	Br-84m	6.07E+04	1.14E-05	1.16E+14	3.21E+14	8.14E+13	6.55E+13	8.62E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.12E-01	8.62E-01	2.19E-01	1.76E-01	2.31E+00	
Bromine (35)	Br-85	1.26E+05	5.52E-06	4.02E+05	5.61E+05	1.79E+05	2.02E+05	1.38E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.28E-10	7.36E-10	2.35E-10	2.65E-10	1.81E-09	
Carbon (6)	C-10	1.14E+06	6.11E-07	1.71E+22	4.97E+22	1.12E+22	8.83E+21	1.39E+23	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.92E+05	8.50E+05	1.92E+05	1.51E+05	2.38E+06	
Carbon (6)	C-11	1.79E+04	3.88E-05																	
Carbon (6)	C-14	1.22E-04	5.70E+03																	
Calcium (20)	Ca-41	6.79E-06	1.02E+05																	
Calcium (20)	Ca-45	1.55E+00	4.46E-01	1.87E+10	6.46E+09	4.18E+09	3.20E+10	3.47E+10	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.05E+00	3.63E-01	2.35E-01	1.80E+00	1.95E+00	
Calcium (20)	Ca-47	5.58E+01	1.24E-02	1.86E+01	4.56E+01	1.11E+01	8.75E+00	1.37E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.04E-11	7.45E-11	1.81E-11	1.43E-11	2.24E-10	
Calcium (20)	Ca-49	4.18E+04	1.66E-05	3.16E+09	4.19E+09	2.03E+09	2.37E+09	1.65E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.20E-06	9.54E-06	4.62E-06	5.39E-06	3.75E-06	
Cadmium (48)	Cd-101	2.68E+05	2.59E-06	5.58E+04	1.12E+05	2.06E+04	9.97E+04	5.07E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.08E-11	8.19E-11	1.51E-11	7.29E-11	3.71E-10	
Cadmium (48)	Cd-102	6.62E+04	1.05E-05	4.56E+11	1.17E+12	2.71E+11	2.38E+11	3.45E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.36E-03	3.48E-03	8.09E-04	7.13E-04	1.03E-02	
Cadmium (48)	Cd-103	4.99E+04	1.39E-05	1.03E+04	1.84E+04	4.24E+03	9.83E+03	6.17E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.14E-11	7.35E-11	1.70E-11	3.94E-11	2.47E-10	
Cadmium (48)	Cd-104	6.31E+03	1.10E-04	6.64E+02	1.36E+03	3.08E+02	3.85E+02	4.52E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.12E-11	4.35E-11	9.84E-12	1.23E-11	1.44E-10	
Cadmium (48)	Cd-105	6.58E+03	1.06E-04	6.18E+02	1.34E+03	2.85E+02	6.49E+02	5.08E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.92E-11	4.15E-11	8.85E-12	2.02E-11	1.58E-10	
Cadmium (48)	Cd-107	9.34E+02	7.42E-04	1.59E+04	2.57E+04	5.68E+03	4.58E+04	6.35E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.53E-09	5.71E-09	1.26E-09	1.02E-08	1.41E-08	
Cadmium (48)	Cd-109	5.48E-01	1.26E+00	8.18E+01	7.93E+01	2.29E+01	2.20E+02	1.30E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.16E-08	3.06E-08	8.82E-09	8.50E-08	5.03E-08	
Cadmium (48)	Cd-111m	7.51E+03	9.23E-05	6.47E+03	1.02E+04	2.44E+03	5.29E+03	3.26E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.86E-10	2.91E-10	7.01E-11	1.52E-10	9.35E-10	
Cadmium (48)	Cd-113	9.00E-17	7.70E+15																	
Cadmium (48)	Cd-113m	4.91E-02	1.41E+01	1.54E+06	2.16E+06	4.96E+05	3.39E+06	1.38E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.88E-03	9.62E-03	2.21E-03	1.51E-02	6.15E-03	
Cadmium (48)	Cd-115	1.14E+02	6.10E-03	1.56E+02	3.58E+02	7.21E+01	1.32E+02	1.13E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.06E-10	7.03E-10	1.42E-10	2.59E-10	2.21E-09	
Cadmium (48)	Cd-115m	5.67E+00	1.22E-01	1.40E+03																

Indoor Worker 3-D BDCCs October 2024																			
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)															
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/cm ²)	
Californium (98)	Cf-246	1.70E+02	4.08E-03	3.27E+06	1.91E+06	9.71E+05	7.59E+06	2.15E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.88E+05	1.00E-08	9.17E-06	5.38E-06	2.73E-06	2.13E-05	6.04E-06
Californium (98)	Cf-247	1.95E+03	3.55E-04	3.37E+03	3.82E+03	1.04E+03	7.55E+03	1.84E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.27E-10	9.39E-10	2.55E-10	1.85E-09	4.52E-09
Californium (98)	Cf-248	7.57E-01	9.15E-01	4.72E+03	7.09E+03	1.98E+03	1.63E+04	2.13E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.00E-06	4.50E-06	1.26E-06	1.04E-05	1.35E-05
Californium (98)	Cf-249	1.97E-03	3.51E+02	8.90E-01	1.51E+00	3.97E-01	6.65E-01	5.17E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.18E-07	3.69E-07	9.72E-08	1.63E-07	1.27E-06
Californium (98)	Cf-250	5.30E-02	1.31E+01	1.52E+02	2.84E+02	6.86E+01	5.06E+02	1.83E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.39E-06	2.60E-06	6.28E-07	4.63E-06	1.67E-05
Californium (98)	Cf-251	7.70E-04	9.00E+02	1.95E+00	2.44E+00	6.47E-01	3.36E+00	9.89E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.23E-06	1.54E-06	4.09E-07	2.12E-06	6.25E-06
Californium (98)	Cf-252	2.62E-01	2.65E+00	1.53E+00	3.30E+00	7.68E-01	9.29E-01	9.49E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.85E-09	5.66E-09	1.43E-09	1.73E-09	1.77E-08
Californium (98)	Cf-253	1.42E+01	4.88E-02	6.50E+03	1.10E+04	2.90E+03	4.85E+03	2.79E+04	7.57E+00	7.59E+00	7.58E+00	7.56E+00	7.56E+00	1.00E-08	2.25E-07	3.80E-07	1.00E-07	1.68E-07	9.66E-07
Californium (98)	Cf-254	4.18E+00	1.66E-01	4.64E-03	1.28E-02	3.07E-03	2.66E-03	2.1E-02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.47E-13	1.48E-12	3.62E-13	3.13E-13	3.78E-12
Californium (98)	Cf-255	4.29E+03	1.62E-04																
Chlorine (17)	Cl-34	1.43E+07	4.84E-08	4.75E+33	3.52E+33	1.56E+33	8.88E+33	3.07E+34	6.31E-06	5.01E-06	7.94E-06	6.31E-06	7.94E-06	7.94E-06	2.19E+16	1.62E+16	7.17E+15	4.09E+16	1.41E+17
Chlorine (17)	Cl-34m	1.14E+04	6.09E-05	1.68E+03	4.68E+03	1.21E+03	1.07E+03	1.11E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.71E-12	2.71E-11	7.00E-12	6.22E-12	6.42E-11
Chlorine (17)	Cl-36	2.30E-06	3.01E+05	7.28E+05	3.14E+05	1.93E+05	1.28E+06	2.07E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.21E+01	9.51E+00	5.85E+00	3.89E+01	6.29E+00
Chlorine (17)	Cl-38	9.78E+03	7.09E-05	2.21E+03	9.40E+03	2.31E+03	1.89E+03	2.26E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.67E-11	7.08E-11	1.74E-11	1.43E-11	1.70E-10
Chlorine (17)	Cl-39	6.55E+03	1.06E-04	9.92E+02	2.58E+03	6.41E+02	5.65E+02	7.17E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.15E-11	2.98E-11	4.71E-12	6.53E-12	8.28E-11
Chlorine (17)	Cl-40	2.70E+05	2.57E-06	5.81E+17	2.03E+18	4.82E+17	3.82E+17	5.45E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.67E+02	5.84E+02	1.39E+02	1.10E+02	1.57E+03
Curium (96)	Cm-238	2.53E+03	2.74E-04	3.12E+02	5.42E+02	1.46E+02	3.50E+02	2.05E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.70E-11	9.90E-11	2.67E-11	6.38E-11	3.75E-10
Curium (96)	Cm-239	2.09E+03	3.31E-04	5.96E+02	7.34E+02	2.07E+02	8.67E+02	2.77E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.32E-10	1.63E-10	4.60E-11	1.92E-10	6.13E-10
Curium (96)	Cm-240	9.37E+00	7.40E-02	1.10E+02	3.25E+02	8.35E+01	6.12E+01	9.06E+02	1.72E+01	1.72E+01	1.72E+01	1.72E+01	1.72E+01	1.72E+01	5.47E-09	1.62E-08	4.15E-09	3.04E-09	4.51E-08
Curium (96)	Cm-241	7.71E+00	8.99E-02	1.45E+00	2.18E+00	5.85E-01	1.90E+00	9.41E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.82E-11	1.32E-10	3.55E-11	1.15E-10	5.70E-10
Curium (96)	Cm-242	1.55E+00	4.46E-01	8.50E+04	3.50E+04	2.21E+04	6.94E+04	3.36E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.88E+05	1.00E-08	2.57E-05	1.06E-05	6.67E-06	2.10E-05	1.01E-05
Curium (96)	Cm-243	2.38E-02	2.91E+01	1.58E+00	1.95E+00	5.62E-01	2.81E+00	8.85E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.13E-08	3.68E-08	1.11E-08	5.55E-08	1.75E-07
Curium (96)	Cm-244	3.83E-02	1.81E+01	3.31E+04	2.11E+04	1.09E+04	1.11E+05	2.32E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.10E-04	2.61E-04	1.35E-04	1.38E-03	2.87E-04
Curium (96)	Cm-245	8.15E-05	8.50E+03	2.29E+00	2.53E+00	7.53E-01	4.38E+00	1.01E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.77E+02	1.34E-05	1.47E-05	4.39E-06	2.55E-05	5.90E-05
Curium (96)	Cm-246	1.46E-04	4.76E+03	3.57E+02	6.43E+02	1.68E+02	1.30E+03	4.22E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.17E-03	2.11E-03	5.50E-04	4.27E-03	1.38E-02
Curium (96)	Cm-247	4.44E-08	1.56E+07	5.57E-01	8.05E-01	2.36E-01	4.97E-01	2.79E+00	7.64E+04	7.92E+04	7.93E+04	6.97E+04	7.66E+04	7.66E+04	6.01E-03	8.68E-03	2.55E-03	5.36E-03	3.01E-02
Curium (96)	Cm-248	1.99E-06	3.48E+05	1.73E-01	4.10E-01	1.03E-01	1.02E-01	1.14E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.18E-05	9.91E-05	2.49E-05	2.46E-05	2.76E-04
Curium (96)	Cm-249	5.68E+03	1.22E-04	3.73E+05	3.13E+05	1.30E+05	5.90E+05	1.52E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.18E-08	2.67E-08	1.11E-08	5.02E-08	1.29E-07
Curium (96)	Cm-250	8.35E-05	8.30E+03	1.75E-03	4.71E-03	1.15E-03	1.00E-03	1.20E-02	1.26E-01	1.46E-01	1.43E-01	1.13E-01	1.13E-01	1.30E-01	1.02E-08	2.74E-08	6.69E-09	5.82E-09	6.99E-08
Curium (96)	Cm-251	2.17E+04	3.20E-05	6.68E+04	7.82E+04	2.09E+04	1.26E+05	2.72E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.50E-09	1.76E-09	4.70E-10	2.84E-09	6.10E-09
Cobalt (27)	Co-54m	2.46E+05	2.82E-06	9.65E+17	2.58E+18	6.62E+17	5.18E+17	7.07E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.11E+02	1.10E+03	2.82E+02	2.21E+02	3.01E+03
Cobalt (27)	Co-55	3.46E+02	2.00E-03	4.15E+01	9.95E+01	2.53E+01	2.38E+01	2.95E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.28E-11	3.07E-11	7.79E-12	7.35E-12	9.10E-11
Cobalt (27)	Co-56	3.28E+00	2.12E-01	1.12E-01	2.57E-01	6.43E-02	6.29E-02	8.44E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.71E-12	8.53E-12	2.13E-12	2.09E-12	2.80E-11
Cobalt (27)	Co-57	9.31E-01	7.44E-01	3.83E+00	2.97E+00	1.13E+00	4.32E+00	1.34E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.55E-10	3.53E-10	1.34E-10	5.13E-10	1.59E-09
Cobalt (27)	Co-58	3.57E+00	1.94E-01	1.18E+00	1.64E+00	4.78E-01	6.37E-01	6.62E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.73E-11	5.16E-11	1.51E-11	2.01E-11	2.09E-10
Cobalt (27)	Co-58m	6.72E+02	1.03E-03	2.22E+02	3.08E+02	9.00E+01	1.20E+02	1.24E+03	4.27E-05	4.24E-05	4.27E-05	4.28E-05	4.20E-05	4.20E-05	3.73E-11	5.16E-11	1.51E-11	2.01E-11	2.09E-10
Cobalt (27)	Co-60	1.31E-01	5.27E+00	6.35E-02	1.77E-01	4.17E-02	3.35E-02	5.43E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.63E-11	1.57E-10	3.69E-11	2.97E-11	4.81E-10
Cobalt (27)	Co-60m	3.48E+04	1.99E-05	1.69E+04	4.71E+04	1.11E+04	8.89E+03	1.44E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.64E-11	1.58E-10	3.70E-11	2.98E-11	4.82E-10
Cobalt (27)	Co-61	3.68E+03	1.88E-04	2.64E+04	2.20E+04	9.95E+03	2.87E+04	4.32E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.50E-10	7.07E-10	3.20E-10	9.22E-10	1.39E-09
Cobalt (27)	Co-62	2.43E+05	2.85E-06	2.76E+18	8.08E+18	1.93E+18	1.54E+18	2.24E+19	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.37E+03	4.00E+03	9.57E+02	7.62E+02	1.11E+04
Cobalt (27)	Co-62m	2.62E+04	2.65E-05	6.80E+11	2.00E+12	4.74E+11	3.79E+11	5.74E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.12E-03	9.18E-03	2.18E-03	1.74E-03	2.64E-02
Chromium (24)	Cr-48	2.82E+02	2.46E-03	1.18E+01	3.07E+01	7.59E+00	7.28E+00	9.15E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.90E-12	1.02E-11	2.51E-12	2.41E-12	3.03E-11
Chromium (24)	Cr-49	8.61E+03	8.05E-05	3.90E+03	6.03E+03	1.55E+03	3.05E+03	1.21E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.31E-11	6.66E-11	1.72E-11	3.37E-11	1.34E-10
Chromium (24)	Cr-51	9.13E+00	7.59E-02	2.94E+02	2.39E+02	9.94E+01	4.12E+02	1.80E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.18E-09	2.59E-09	1.08E-09	4.47E-09	1.95E-08
Chromium (24)	Cr-55	1.04E+05	6.65E-06	4.96E+21	5.03E+21	2.49E+21	3.01E+21	2.76E+21	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.08E+06	5.15E+06	2.56E+06	3.09E+06	2.83E+06
Chromium (24)	Cr-56	6.13E+04	1.13E-05	7.81E+03	2.31E+04	5.36E+03	4.74E+03	6.33E+04	1.00E-08	1.00E-08	1.00E-08								

Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)															
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	DL=1 (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)	DL=1 (mg/cm ²)	
Cesium (55)	Cs-140	3.43E+05	2.02E-06	2.03E+04	6.38E+04	1.58E+04	1.38E+04	1.66E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.61E-11	5.05E-11	1.25E-11	1.09E-11	1.31E-10
Copper (29)	Cu-57	1.11E+08	6.22E-09	1.55E+07	2.58E+07	7.25E+06	8.75E+06	8.86E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.54E-11	2.57E-11	7.20E-12	8.69E-12	8.81E-11
Copper (29)	Cu-59	2.68E+05	2.58E-06	1.37E+15	1.05E+15	4.52E+14	2.55E+15	1.03E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.84E-01	4.49E-01	1.93E-01	1.09E+00	4.39E+00
Copper (29)	Cu-60	1.54E+04	4.51E-05	3.76E+08	9.94E+08	2.41E+08	2.05E+08	2.87E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.85E-06	7.53E-06	1.83E-06	1.55E-06	2.17E-05
Copper (29)	Cu-61	1.82E+03	3.80E-04	1.57E+03	1.64E+03	6.47E+02	9.91E+02	7.65E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.02E-10	1.06E-10	4.21E-11	6.44E-11	4.97E-10
Copper (29)	Cu-62	3.77E+04	1.84E-05	1.91E+15	1.61E+15	6.83E+14	2.27E+15	1.08E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.09E+00	5.16E+00	2.18E+00	7.25E+00	3.45E+01
Copper (29)	Cu-64	4.78E+02	1.45E-03	2.73E+03	2.12E+03	9.09E+02	5.09E+03	2.02E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.09E-10	5.51E-10	2.36E-10	1.32E-09	5.25E-09
Copper (29)	Cu-66	7.11E+04	9.74E-06	9.04E+16	2.60E+17	6.90E+16	6.43E+16	4.02E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.63E+02	4.69E+02	1.24E+02	1.16E+02	7.23E+02
Copper (29)	Cu-67	9.82E+01	7.06E-03	6.24E+02	7.35E+02	1.90E+02	4.13E+02	1.86E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.26E-10	9.74E-10	2.51E-10	5.47E-10	2.47E-09
Copper (29)	Cu-69	1.28E+05	5.42E-06	5.10E+12	7.12E+12	3.09E+12	3.36E+12	8.89E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.35E-03	7.46E-03	3.23E-03	3.52E-03	9.31E-04
Dysprosium (66)	Dy-148	1.10E+05	6.28E-06	7.99E+03	1.73E+04	3.70E+03	4.33E+03	4.83E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.08E-11	4.51E-11	9.64E-12	1.13E-11	1.26E-10
Dysprosium (66)	Dy-149	8.67E+04	7.99E-06	7.90E+03	1.73E+04	3.80E+03	6.91E+03	4.75E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.64E-11	5.75E-11	1.27E-11	2.30E-11	1.58E-10
Dysprosium (66)	Dy-150	5.08E+04	1.36E-05	2.30E+03	5.45E+03	1.12E+03	1.35E+03	1.53E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.32E-11	3.12E-11	6.40E-12	7.73E-12	8.77E-11
Dysprosium (66)	Dy-151	2.03E+04	3.41E-05	2.06E+03	4.07E+03	8.80E+02	1.59E+03	1.09E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.97E-11	5.87E-11	1.27E-11	2.28E-11	1.57E-10
Dysprosium (66)	Dy-152	2.55E+03	2.72E-04	2.15E+02	4.87E+02	1.02E+02	1.64E+02	1.28E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.48E-11	5.63E-11	1.18E-11	1.89E-11	1.48E-10
Dysprosium (66)	Dy-153	9.49E+02	7.31E-04	8.04E+01	1.54E+02	3.40E+01	9.40E+01	4.31E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.52E-11	4.83E-11	1.06E-11	2.94E-11	1.35E-10
Dysprosium (66)	Dy-154	2.31E-07	3.00E+06	1.20E+02	2.13E+02	4.64E+01	1.16E+02	5.70E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.89E-11	1.04E-10	2.27E-11	5.69E-11	2.80E-10
Dysprosium (66)	Dy-155	6.13E+02	1.13E-03	4.35E+02	7.69E+02	1.72E+02	4.18E+02	2.05E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.78E-10	3.14E-10	7.04E-11	1.71E-10	8.36E-10
Dysprosium (66)	Dy-157	7.46E+02	9.29E-04	4.35E+02	7.69E+02	1.72E+02	4.18E+02	2.05E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.78E-10	3.14E-10	7.04E-11	1.71E-10	8.36E-10
Dysprosium (66)	Dy-159	1.75E+00	3.96E-01	5.05E+01	3.22E+01	1.33E+01	9.87E+01	7.12E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.89E-09	5.68E-09	2.35E-09	1.74E-08	1.25E-08
Dysprosium (66)	Dy-165	2.60E+03	2.66E-04	2.53E+05	2.87E+05	7.39E+04	2.31E+05	3.22E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.11E-08	3.53E-08	9.09E-09	2.85E-08	3.96E-08
Dysprosium (66)	Dy-165m	2.90E+05	2.39E-06	2.86E+07	3.24E+07	8.35E+06	2.61E+07	3.64E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.16E-08	3.58E-08	9.22E-09	2.89E-08	4.02E-08
Dysprosium (66)	Dy-166	7.44E+01	9.32E-03	1.17E+03	8.39E+02	3.14E+02	1.61E+03	1.76E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.06E-09	6.36E-09	1.36E-09	6.66E-09	7.63E-09
Dysprosium (66)	Dy-167	5.87E+04	1.18E-05	4.66E+04	9.32E+04	2.35E+04	3.17E+04	2.25E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.57E-10	5.14E-10	1.29E-10	1.75E-10	1.24E-09
Dysprosium (66)	Dy-168	4.19E+04	1.66E-05	3.11E+13	5.48E+13	1.32E+13	1.73E+13	1.48E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.42E-01	4.27E-01	1.03E-01	1.34E-01	1.15E+00
Erbium (68)	Er-154	9.77E+04	7.10E-06	8.81E+05	2.09E+06	4.28E+05	5.16E+05	5.86E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.70E-09	6.38E-09	1.31E-09	1.58E-09	1.79E-08
Erbium (68)	Er-156	1.87E+04	3.71E-05	1.07E+03	1.91E+03	4.51E+02	6.79E+02	5.21E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.73E-11	3.10E-11	7.30E-12	1.10E-11	8.44E-11
Erbium (68)	Er-159	1.01E+04	6.85E-05	1.31E+03	1.94E+03	4.42E+02	9.09E+02	5.42E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.01E-11	5.92E-11	1.35E-11	2.77E-11	1.65E-10
Erbium (68)	Er-161	1.89E+03	3.66E-04	3.35E+02	4.87E+02	1.09E+02	2.34E+02	1.45E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.54E-11	8.05E-11	1.80E-11	3.86E-11	2.40E-10
Erbium (68)	Er-163	4.86E+03	1.43E-04	1.87E+05	1.02E+05	3.67E+04	2.27E+05	2.19E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.22E-08	6.67E-09	2.39E-09	1.48E-08	1.43E-08
Erbium (68)	Er-165	5.86E+02	1.18E-03	2.73E+04	1.37E+04	5.10E+03	3.28E+04	2.91E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.49E-08	7.49E-09	2.79E-09	1.47E-08	1.59E-08
Erbium (68)	Er-167m	9.63E+06	7.19E-08	1.02E+30	1.03E+30	2.82E+29	8.18E+29	3.19E+30	7.94E-06	1.26E-05	7.94E-06	1.26E-05	7.94E-06	1.26E-05	3.43E+13	3.48E+13	9.49E+12	2.75E+13	1.07E+14
Erbium (68)	Er-169	2.69E+01	2.58E-02	2.58E+07	9.98E+06	5.98E+06	4.38E+07	6.09E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.14E-04	1.22E-04	7.29E-05	5.34E-04	7.42E-04
Erbium (68)	Er-171	8.08E+02	8.58E-04	5.14E+02	7.93E+02	2.08E+02	3.90E+02	1.93E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.11E-10	3.26E-10	8.52E-11	1.60E-10	7.93E-10
Erbium (68)	Er-172	1.23E+02	5.63E-03	4.23E+01	6.07E+01	1.58E+01	2.60E+01	1.82E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.15E-10	1.65E-10	4.28E-11	7.05E-11	4.94E-10
Erbium (68)	Er-173	2.54E+05	2.73E-06	2.44E+05	4.93E+05	1.45E+05	1.28E+05	1.27E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.22E-10	6.51E-10	1.91E-10	1.69E-10	1.68E-09
Einsteinium (99)	Es-249	3.56E+03	1.94E-04	1.28E+03	1.97E+03	5.12E+02	1.46E+03	7.31E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.73E-10	2.67E-10	6.93E-11	1.98E-10	9.92E-10
Einsteinium (99)	Es-250	7.06E+02	9.82E-04	2.19E+01	3.72E+01	8.85E+00	3.73E+01	1.63E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.51E-11	2.56E-11	6.08E-12	2.56E-11	1.12E-10
Einsteinium (99)	Es-250m	2.73E+03	2.53E-04	7.03E+02	1.21E+03	3.04E+02	9.40E+02	4.74E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.25E-10	2.15E-10	5.40E-11	1.67E-10	8.40E-10
Einsteinium (99)	Es-251	1.84E+02	3.77E-03	3.83E+02	4.38E+02	1.17E+02	8.18E+02	1.98E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.01E-09	1.16E-09	3.11E-10	2.16E-09	5.27E-09
Einsteinium (99)	Es-253	1.24E+01	5.61E-02	5.65E+03	9.56E+03	2.52E+03	4.22E+03	3.28E+04	7.49E+00	7.51E+00	7.50E+00	7.48E+00	7.50E+00	2.25E-07	3.80E-07	1.00E-07	1.68E-07	1.31E-06	
Einsteinium (99)	Es-254	9.17E-01	7.55E-01	4.18E-01	8.31E-01	2.07E-01	3.30E-01	3.04E+00	2.68E+04	2.64E+04	2.66E+04	2.69E+04</							

Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)															
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	Plane BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/cm ²)	
Hafnium (72)	Hf-182	7.70E-08	9.00E+06	1.13E-01	1.74E-01	4.78E-02	7.52E-02	5.12E-01	7.00E+00	7.00E+00	7.00E+00	7.00E+00	7.00E+00	7.00E+00	5.19E-04	7.97E-04	2.19E-04	3.45E-04	2.35E-03
Hafnium (72)	Hf-182m	5.92E+03	1.17E-04	4.98E+02	7.41E+02	2.05E+02	3.49E+02	2.15E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.97E-11	4.42E-11	1.22E-11	2.08E-11	1.28E-10
Hafnium (72)	Hf-183	5.69E+03	1.22E-04	1.11E+03	1.46E+03	4.66E+02	7.87E+02	4.58E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.96E-11	9.10E-11	2.91E-11	4.91E-11	2.86E-10
Hafnium (72)	Hf-184	1.47E+03	4.70E-04	7.98E+01	1.34E+02	3.95E+01	5.31E+01	4.11E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.93E-11	3.24E-11	9.57E-12	1.29E-11	9.96E-11
Mercury (80)	Hg-190	1.82E+04	3.81E-05	8.34E+02	1.79E+03	4.95E+02	6.13E+02	5.02E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.69E-11	3.62E-11	1.00E-11	1.24E-11	1.02E-10
Mercury (80)	Hg-191m	7.17E+03	9.67E-05	3.34E+02	4.83E+02	1.50E+02	2.39E+02	1.52E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.73E-11	2.26E-11	7.75E-12	1.23E-11	7.86E-11
Mercury (80)	Hg-192	1.25E+03	5.54E-04	7.10E+01	1.29E+02	3.82E+01	5.47E+01	3.83E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.11E-11	3.85E-11	1.14E-11	1.63E-11	1.14E-10
Mercury (80)	Hg-193	1.60E+03	4.34E-04	2.40E+02	2.89E+02	1.09E+02	2.33E+02	1.11E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.63E-11	6.77E-11	2.55E-11	5.47E-11	2.60E-10
Mercury (80)	Hg-193m	5.14E+02	1.35E-03	6.44E+01	8.58E+01	2.85E+01	4.57E+01	2.92E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.69E-11	6.24E-11	2.08E-11	3.33E-11	2.13E-10
Mercury (80)	Hg-194	1.58E-03	4.40E+02	1.50E-01	2.47E-01	7.60E-02	1.17E-01	7.46E-01	4.04E-02	4.04E-02	4.04E-02	4.04E-02	4.04E-02	3.59E-08	5.91E-08	1.82E-08	2.79E-08	1.78E-07	
Mercury (80)	Hg-195	5.77E+02	1.20E-03	5.18E+02	4.47E+02	1.91E+02	8.11E+02	2.03E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.40E-10	2.93E-10	1.25E-10	5.32E-10	1.33E-09
Mercury (80)	Hg-195m	1.46E+02	4.75E-03	7.32E+01	6.50E+01	2.73E+01	1.18E+02	3.43E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.90E-10	1.69E-10	7.07E-11	3.05E-10	8.88E-10
Mercury (80)	Hg-197	9.35E+01	7.41E-03	5.79E+02	3.13E+02	1.56E+02	9.73E+02	1.34E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.37E-09	1.28E-09	6.97E-10	3.98E-09	5.47E-09
Mercury (80)	Hg-197m	2.55E+02	2.72E-03	5.53E+02	3.73E+02	1.68E+02	8.81E+02	1.73E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.29E-10	5.58E-10	2.51E-10	1.32E-09	2.59E-09
Mercury (80)	Hg-199m	8.54E+03	8.12E-05	1.22E+04	1.04E+04	4.41E+03	1.26E+04	4.35E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.53E-10	4.69E-10	1.99E-10	5.72E-10	1.97E-09
Mercury (80)	Hg-203	5.43E+00	1.28E-01	8.22E+00	1.67E+01	4.83E+00	6.06E+00	4.48E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.97E-10	1.21E-09	3.50E-10	4.40E-10	3.25E-09
Mercury (80)	Hg-205	7.00E+04	9.89E-06	6.50E+18	5.72E+18	2.00E+18	4.86E+18	2.47E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.69E+04	3.25E+04	1.14E+04	2.76E+04	1.40E+04
Mercury (80)	Hg-206	4.47E+04	1.55E-05	1.29E+15	2.50E+15	7.34E+14	9.41E+14	5.00E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.15E+01	2.24E+01	6.56E+00	8.41E+00	4.47E+01
Mercury (80)	Hg-207	1.26E+05	5.52E-06	2.45E+17	6.63E+17	1.76E+17	1.72E+17	1.71E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.84E+02	2.12E+03	5.61E+02	5.51E+02	5.48E+03
Holmium (67)	Ho-150	2.85E+05	2.44E-06	1.29E+04	3.05E+04	6.26E+03	7.56E+03	8.58E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.32E-11	3.12E-11	6.40E-12	7.73E-12	8.77E-11
Holmium (67)	Ho-153	1.81E+05	3.82E-06	1.53E+04	2.94E+04	6.47E+03	1.79E+04	8.20E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.51E-11	4.82E-11	1.06E-11	2.93E-11	1.34E-10
Holmium (67)	Ho-153m	3.92E+04	1.77E-05	3.32E+03	6.37E+03	1.40E+03	3.88E+03	1.78E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.52E-11	4.83E-11	1.06E-11	2.94E-11	1.35E-10
Holmium (67)	Ho-154	3.10E+04	2.24E-05	1.09E+07	2.56E+07	5.27E+06	6.25E+06	7.24E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.05E-07	2.47E-07	5.09E-08	6.03E-08	6.98E-07
Holmium (67)	Ho-154m	1.17E+05	5.90E-06	3.21E+15	7.87E+15	1.95E+15	1.87E+15	1.98E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.17E+00	2.00E+01	4.97E+00	4.75E+00	5.05E+01
Holmium (67)	Ho-155	7.50E+03	9.13E-05	8.96E+02	1.56E+03	3.44E+02	8.98E+02	4.27E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.55E-11	6.19E-11	1.36E-11	3.56E-11	1.69E-10
Holmium (67)	Ho-156	6.50E+03	1.07E-04	3.73E+02	6.66E+02	1.57E+02	2.36E+02	1.81E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.73E-11	3.10E-11	7.30E-12	1.10E-11	8.44E-11
Holmium (67)	Ho-157	2.89E+04	2.40E-05	1.69E+04	2.98E+04	6.68E+03	1.62E+04	7.93E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.78E-10	3.14E-10	7.04E-11	1.71E-10	8.36E-10
Holmium (67)	Ho-159	1.10E+04	6.29E-05	4.35E+03	5.65E+03	1.36E+03	4.66E+03	1.49E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.22E-10	1.58E-10	3.81E-11	1.30E-10	4.16E-10
Holmium (67)	Ho-160	1.42E+04	4.87E-05	1.70E+08	2.94E+08	6.41E+07	1.04E+08	8.52E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.71E-06	6.43E-06	1.40E-06	2.26E-06	1.86E-05
Holmium (67)	Ho-161	2.45E+03	2.83E-04	2.90E+04	2.18E+04	7.67E+03	5.62E+04	5.15E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.70E-09	2.78E-09	9.78E-10	7.18E-09	6.57E-09
Holmium (67)	Ho-162	2.43E+04	2.85E-05	1.76E+13	2.74E+13	6.69E+12	2.98E+13	8.27E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.28E-01	3.55E-01	8.66E-02	3.85E-01	1.07E+00
Holmium (67)	Ho-162m	5.44E+03	1.27E-04	1.37E+03	2.12E+03	5.23E+02	1.59E+03	6.85E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.95E-11	1.23E-10	3.02E-11	9.17E-11	3.96E-10
Holmium (67)	Ho-163	1.52E-04	4.57E+03																
Holmium (67)	Ho-164	1.26E+04	5.52E-05	2.30E+10	1.39E+10	5.27E+09	3.49E+10	2.50E+10	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.83E-04	3.51E-04	1.33E-04	8.85E-04	6.34E-04
Holmium (67)	Ho-164m	9.59E+03	7.23E-05	1.44E+05	6.66E+04	3.30E+04	2.34E+05	1.79E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.79E-09	2.21E-09	1.09E-09	7.78E-09	5.93E-09
Holmium (67)	Ho-166	2.27E+02	3.06E-03	9.91E+03	7.77E+03	3.39E+03	1.45E+04	1.14E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.41E-08	1.10E-08	4.82E-09	2.06E-08	1.62E-08
Holmium (67)	Ho-166m	5.78E-04	1.20E+03	6.57E-02	1.26E+01	3.03E-02	3.76E-02	3.43E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.66E-08	7.03E-08	1.69E-08	2.10E-08	1.91E-07
Holmium (67)	Ho-167	1.96E+03	3.54E-04	1.55E+03	3.11E+03	7.83E+02	1.06E+03	7.52E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.57E-10	5.14E-10	1.29E-10	1.75E-10	2.42E-09
Holmium (67)	Ho-168	1.22E+05	5.69E-06	7.71E+16	1.41E+17	3.42E+16	4.19E+16	3.91E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.06E+02	3.77E+02	9.15E+01	1.12E+02	1.05E+03
Holmium (67)	Ho-168m	1.66E+05	4.19E-06	3.62E+16	6.60E+16	1.60E+16	1.97E+16	1.84E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.12E+01	1.30E+02	3.16E+01	3.87E+01	3.61E+02
Holmium (67)	Ho-170	1.32E+05	5.25E-06	1.72E+16	3.12E+16	7.67E+15	1.11E+16	8.62E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.29E+01	7.79E+01	1.92E+01	2.78E+01	2.15E+02
Iodine (53)	I-118	2.66E+04	2.61E-05	2.25E+04	5.11E+04	8.32E+03	6.07E+04	2.21E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.93E-10	4.40E-10	7.17E-11	5.23E-10	1.90E-09
Iodine (53)	I-118m	4.29E+04																	

Indoor Worker 3-D BDCCs October 2024																			
Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)													
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/cm ²)	
Indium (49)	In-108	6.28E+03	1.10E-04	1.01E+02	2.45E+02	5.52E+01	6.06E+01	7.80E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.37E-12	8.17E-12	1.84E-12	2.02E-12	2.60E-11
Indium (49)	In-108m	9.20E+03	7.53E-05	5.26E+02	1.32E+03	2.88E+02	3.22E+02	4.38E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.20E-11	3.02E-11	6.57E-12	7.33E-12	9.99E-11
Indium (49)	In-109	1.45E+03	4.79E-04	3.24E+02	6.63E+02	1.36E+02	3.55E+02	2.23E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.74E-11	9.70E-11	1.99E-11	5.20E-11	3.27E-10
Indium (49)	In-109m	2.72E+05	2.55E-06	6.06E+04	1.24E+05	2.55E+04	6.65E+04	4.18E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.72E-11	9.65E-11	1.98E-11	5.17E-11	3.25E-10
Indium (49)	In-110	1.24E+03	5.59E-04	2.65E+01	6.16E+01	1.36E+01	1.58E+01	2.07E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.57E-12	1.06E-11	2.34E-12	2.72E-12	3.57E-11
Indium (49)	In-110m	5.27E+03	1.31E-04	6.98E+02	1.62E+03	3.50E+02	3.96E+02	5.46E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.83E-11	6.57E-11	1.42E-11	1.67E-11	2.21E-10
Indium (49)	In-111	9.02E+01	7.68E-03	3.12E+01	5.14E+01	1.18E+01	3.05E+01	1.64E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.46E-11	1.23E-10	2.81E-11	7.27E-11	3.91E-10
Indium (49)	In-111m	4.73E+04	1.46E-05	1.64E+04	2.69E+04	6.16E+03	1.59E+04	8.58E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.45E-11	1.23E-10	2.80E-11	7.26E-11	3.91E-10
Indium (49)	In-112	2.43E+04	2.85E-05	2.32E+13	5.28E+13	9.11E+12	5.45E+13	2.44E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.07E-01	4.72E-01	8.14E-02	4.87E-01	2.18E+00
Indium (49)	In-112m	1.77E+04	3.91E-05	7.47E+10	1.68E+11	2.90E+10	1.76E+11	7.63E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.16E-04	2.06E-03	3.56E-04	2.16E-03	9.36E-03
Indium (49)	In-113m	3.66E+03	1.89E-04	5.20E+03	1.02E+04	2.16E+03	3.98E+03	3.46E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.12E-10	6.10E-10	1.29E-10	2.38E-10	2.07E-09
Indium (49)	In-114	3.04E+05	2.28E-06	2.97E+23	2.84E+23	9.66E+22	4.39E+23	2.16E+23	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.16E+08	2.07E+08	7.03E+07	3.20E+08	1.57E+08
Indium (49)	In-114m	5.11E+00	1.36E-01	2.60E+01	5.37E+01	9.46E+00	5.24E+01	2.09E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.12E-09	2.33E-09	4.10E-10	2.27E-09	9.05E-09	
Indium (49)	In-115	1.57E-15	4.41E+14	1.35E+03	5.12E-04	2.97E+03	6.20E+03	1.13E+03	3.56E+03	2.16E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.90E-10	1.02E-09	1.87E-10	5.87E-10	3.57E-09
Indium (49)	In-115m	1.35E+03	5.12E-04	2.97E+03	6.20E+03	1.13E+03	3.56E+03	2.16E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.90E-10	1.02E-09	1.87E-10	5.87E-10	3.57E-09
Indium (49)	In-116m	6.69E+03	1.04E-04	3.91E+02	1.08E+03	2.63E+02	2.11E+02	3.17E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.31E-11	3.64E-11	8.83E-12	7.08E-12	1.07E-10
Indium (49)	In-117	8.43E+03	8.22E-05	2.15E+03	5.46E+03	1.40E+03	1.29E+03	1.25E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.78E-11	1.47E-10	3.76E-11	3.48E-11	3.37E-10
Indium (49)	In-117m	3.13E+03	2.21E-04	1.56E+03	3.86E+03	9.56E+02	9.72E+02	8.80E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.13E-10	2.80E-10	6.93E-11	7.04E-11	6.37E-10
Indium (49)	In-118	4.37E+06	1.59E-07	1.93E+28	3.64E+28	1.11E+28	9.07E+27	5.97E+28	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.01E+12	1.91E+12	5.84E+11	4.75E+11	3.13E+12
Indium (49)	In-118m	8.35E+04	8.30E-06	5.36E+14	1.63E+15	3.80E+14	3.02E+14	4.70E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.47E+00	4.46E+00	1.04E+00	8.29E-01	1.29E+01
Indium (49)	In-119	1.52E+05	4.57E-06	1.28E+10	6.27E+09	2.75E+09	3.49E+10	7.62E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.95E-05	9.54E-06	4.19E-06	5.31E-05	1.16E-05
Indium (49)	In-119m	2.02E+04	3.42E-05	3.04E+10	1.42E+10	6.53E+09	8.13E+10	1.81E+10	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.47E-04	1.70E-04	7.45E-05	9.27E-04	2.07E-04
Indium (49)	In-121	9.46E+05	7.32E-07	1.45E+12	8.04E+11	3.78E+11	4.14E+12	1.17E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.60E-04	1.99E-04	9.37E-05	1.03E-03	2.90E-04
Indium (49)	In-121m	9.39E+04	7.38E-06	1.20E+13	6.65E+12	3.12E+12	3.42E+13	9.68E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.00E-02	1.66E-02	7.81E-03	8.55E-02	2.42E-02
Iridium (77)	Ir-180	2.43E+05	2.85E-06	7.68E+10	9.12E+10	2.81E+10	5.99E+10	3.22E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.10E-04	1.31E-04	4.05E-05	8.62E-05	4.63E-04
Iridium (77)	Ir-182	2.43E+04	2.85E-05	2.14E+03	2.44E+03	7.79E+02	1.67E+03	8.38E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.11E-11	3.55E-11	1.13E-11	2.43E-11	1.22E-10
Iridium (77)	Ir-183	6.28E+03	1.10E-04	4.15E+02	4.86E+02	1.66E+02	3.41E+02	1.74E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.35E-11	2.75E-11	9.38E-12	1.93E-11	9.86E-11
Iridium (77)	Ir-184	1.96E+03	3.53E-04	9.02E+01	1.46E+02	4.28E+01	6.29E+01	4.47E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.64E-11	2.65E-11	7.78E-12	1.14E-11	8.12E-11
Iridium (77)	Ir-185	4.22E+02	1.64E-03	3.75E+01	4.49E+01	1.63E+01	3.64E+01	1.89E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.20E-11	3.82E-11	1.39E-11	3.10E-11	1.61E-10
Iridium (77)	Ir-186	3.65E+02	1.90E-03	2.07E+01	3.40E+01	1.01E+01	1.46E+01	1.03E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.04E-11	3.37E-11	9.95E-12	1.45E-11	1.02E-10
Iridium (77)	Ir-186m	3.16E+03	2.19E-04	2.61E+02	4.10E+02	1.20E+02	1.79E+02	1.28E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.98E-11	4.68E-11	1.37E-11	2.05E-11	1.46E-10
Iridium (77)	Ir-187	5.78E+02	1.20E-03	3.46E+02	3.19E+02	1.30E+02	3.93E+02	1.37E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.17E-10	2.00E-10	8.17E-11	2.47E-10	8.61E-10
Iridium (77)	Ir-188	1.46E+02	4.74E-03	8.82E+00	1.40E+01	4.26E+00	6.17E+00	4.57E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.20E-11	3.48E-11	1.06E-11	1.54E-11	1.14E-10
Iridium (77)	Ir-189	1.92E+01	3.62E-02	1.07E+02	5.93E+01	2.95E+01	1.61E+02	2.65E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.05E-09	1.14E-09	5.65E-10	3.09E-09	5.07E-09
Iridium (77)	Ir-190	2.15E+01	3.23E-02	1.25E+00	2.31E+00	6.44E-01	7.57E-01	6.39E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.15E-11	3.97E-11	1.11E-11	1.30E-11	1.10E-10
Iridium (77)	Ir-190m	5.42E+03	1.28E-04	3.17E+02	5.83E+02	1.63E+02	1.91E+02	1.61E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.15E-11	3.97E-11	1.11E-11	1.30E-11	1.10E-10
Iridium (77)	Ir-190m	1.97E+03	3.52E-04	1.05E+02	2.09E+02	5.87E+01	5.92E+01	5.92E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.96E-11	3.92E-11	1.10E-11	1.11E-11	1.11E-10
Iridium (77)	Ir-191m	4.42E+06	1.57E-07	2.41E+27	1.41E+27	6.64E+26	3.82E+27	6.74E+27	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.02E+11	1.18E+11	5.66E+10	3.20E+11	5.65E+11
Iridium (77)	Ir-192	3.43E+00	2.02E-01	5.99E-01	1.71E+00	4.57E-01	3.98E-01	3.93E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.51E-11	1.86E-10	4.97E-11	4.33E-11	4.27E-10
Iridium (77)	Ir-192m	2.51E+05	2.76E-06	4.39E+04	1.25E+05	3.35E+04	2.92E+04	2.88E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.51E-11	1.86E-10	4.97E-11	4.33E-11	4.27E-10
Iridium (77)	Ir-192m	2.88E-03	2.41E+02	1.70E-01	4.85E-01	1.30E-01	1.13E-01	1.12E+00	1.69E+00	1.69E+00	1.69E+00	1.69E+00	1.69E+00	1.69E+00	2.20E-08	6.29E-08	1.68E-08	1.47E-08	1.45E-07
Iridium (77)	Ir-193m	2.40E+01	2.88E-02	1.17E+05	4.50E+04	2.63E+04	2.09E+05	3.03E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.82E-06	7.02E-07	4.10E-07	3.25E-06	4.73E-06
Iridium (77)	Ir-194	3.15E+02	2.20E-03	4.97E+03	1.32E+04	3.66E+03	3.28E+03	1.67E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.94E-09	1.58E-08	4.38E-09	3.92E-09	2.00E-08
Iridium (77)	Ir-194m	1.48E+00	4.68E-01	5.17E-02	1.41E-01	3.78E-02	2.84E-02	3.63E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.32E-11	3.60E-11	9.61E-12	7.22E-12	9.23E-11
Iridium (77)	Ir-195	2.43E+03	2.85E-04	2.34E+04	1.34E+04	6.55E+03	3.74E+04	3.98E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.65E-09	2.09E-09	1.02E-09	5.82E-09	6.20E-09
Iridium (77)	Ir-195m	1.60E+																	

Indoor Worker 3-D BDCCs October 2024																			
Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)													
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/cm ²)	
Lanthanum (57)	La-128	7.03E+04	9.86E-06	2.95E+04	7.37E+04	1.53E+04	3.37E+04	2.27E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.04E-10	2.60E-10	5.40E-11	1.19E-10	8.03E-10
Lanthanum (57)	La-129	3.14E+04	2.21E-05	6.12E+03	1.57E+04	3.07E+03	9.23E+03	5.07E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.88E-11	1.25E-10	2.45E-11	7.36E-11	4.04E-10
Lanthanum (57)	La-130	4.19E+04	1.66E-05	1.30E+13	3.21E+13	7.38E+12	7.34E+12	8.32E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.81E-02	1.93E-01	4.45E-02	4.42E-02	5.01E-01
Lanthanum (57)	La-131	6.17E+03	1.12E-04	7.07E+02	1.66E+03	3.38E+02	8.45E+02	4.87E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.91E-11	6.82E-11	1.39E-11	3.48E-11	2.00E-10
Lanthanum (57)	La-132	1.26E+03	5.48E-04	8.90E+01	2.23E+02	4.81E+01	5.61E+01	6.38E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.80E-11	4.51E-11	9.73E-12	1.14E-11	1.29E-10
Lanthanum (57)	La-132m	1.50E+04	4.62E-05	1.39E+03	3.47E+03	7.49E+02	8.75E+02	9.94E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.37E-11	5.93E-11	1.28E-11	1.49E-11	1.70E-10
Lanthanum (57)	La-133	1.55E+03	4.47E-04	1.38E+03	3.74E+03	7.24E+02	3.46E+03	1.22E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.30E-10	6.21E-10	1.20E-10	5.76E-10	2.03E-09
Lanthanum (57)	La-134	5.65E+04	1.23E-05	5.01E+14	1.63E+15	2.77E+14	1.32E+15	5.19E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.30E+00	7.49E+00	1.28E+00	6.08E+00	2.39E+01
Lanthanum (57)	La-135	3.11E+02	2.23E-03	4.11E+03	9.58E+03	2.12E+03	1.44E+04	2.01E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.46E-09	8.06E-09	1.79E-09	1.21E-08	1.69E-08
Lanthanum (57)	La-136	3.69E+04	1.88E-05	4.64E+13	1.59E+14	2.64E+13	1.61E+14	5.23E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.31E-01	1.14E+00	1.89E-01	1.15E+00	3.74E+00
Lanthanum (57)	La-137	1.16E-05	6.00E+04	8.57E+01	7.41E+01	2.91E+01	2.81E+02	1.03E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.97E-03	1.70E-03	6.71E-04	6.47E-03	2.37E-03
Lanthanum (57)	La-138	6.79E-12	1.02E+11	1.41E-01	4.04E-01	7.95E-02	1.36E-01	1.31E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.55E+00	1.59E+01	3.13E+00	5.35E+00	5.18E+01
Lanthanum (57)	La-140	1.51E+02	4.60E-03	9.16E+00	2.97E+01	7.28E+00	6.19E+00	7.58E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.65E-11	5.5E-11	1.31E-11	1.12E-11	1.37E-10
Lanthanum (57)	La-141	1.55E+03	4.47E-04	1.45E+04	2.33E+04	5.50E+03	1.00E+04	5.11E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.55E-09	4.11E-09	9.72E-10	1.78E-09	9.02E-09
Lanthanum (57)	La-142	4.00E+03	1.73E-04	3.06E+02	1.07E+03	2.47E+02	1.80E+02	2.88E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.11E-11	7.40E-11	1.71E-11	1.24E-11	1.99E-10
Lanthanum (57)	La-143	2.57E+04	2.70E-05	1.63E+04	4.52E+04	8.41E+03	2.26E+04	1.04E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.77E-10	4.89E-10	9.10E-11	2.45E-10	1.13E-09
Lutetium (71)	Lu-165	3.39E+04	2.04E-05	1.06E+04	1.34E+04	3.17E+03	6.04E+03	3.86E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-10	1.26E-10	3.00E-11	7.59E-11	3.64E-10
Lutetium (71)	Lu-167	7.07E+03	9.80E-05	4.59E+02	6.39E+02	1.59E+02	3.64E+02	1.98E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.10E-11	2.93E-11	7.30E-12	1.67E-11	9.05E-11
Lutetium (71)	Lu-169	1.78E+02	3.89E-03	1.70E+01	2.08E+01	5.27E+00	1.29E+01	6.10E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.13E-11	3.83E-11	9.69E-12	2.37E-11	1.12E-10
Lutetium (71)	Lu-169m	1.37E+05	5.07E-06	1.30E+04	1.60E+04	4.03E+03	9.88E+03	4.67E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.13E-11	3.83E-11	9.68E-12	2.37E-11	1.12E-10
Lutetium (71)	Lu-170	1.26E+02	5.51E-03	6.92E+00	1.11E+01	2.71E+00	4.52E+00	3.50E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.81E-11	2.92E-11	7.12E-12	1.18E-11	9.19E-11
Lutetium (71)	Lu-171	3.07E+01	2.26E-02	6.65E+00	6.98E+00	2.07E+00	6.28E+00	2.75E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.19E-11	7.55E-11	2.24E-11	6.78E-11	2.97E-10
Lutetium (71)	Lu-171m	2.77E+05	2.51E-06	6.00E+04	6.29E+04	1.87E+04	5.66E+04	2.48E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.19E-11	7.55E-11	2.24E-11	6.79E-11	2.97E-10
Lutetium (71)	Lu-172	3.78E+01	1.84E-02	1.98E+00	3.08E+00	7.68E-01	1.33E+00	9.37E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.75E-11	2.72E-11	6.79E-12	1.18E-11	8.28E-11
Lutetium (71)	Lu-172m	9.84E+04	7.04E-06	5.16E+03	8.03E+03	2.00E+03	3.48E+03	2.44E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.75E-11	2.72E-11	6.79E-12	1.18E-11	8.28E-11
Lutetium (71)	Lu-173	5.06E-01	1.37E+00	2.45E+00	1.67E+00	5.11E-01	2.13E+00	4.79E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.63E-09	1.11E-09	3.39E-10	1.41E-09	3.18E-09
Lutetium (71)	Lu-174	2.09E-01	3.31E+00	4.31E+00	3.46E+00	1.16E+00	4.76E+00	1.23E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.95E-09	5.58E-09	1.86E-09	7.68E-09	1.99E-08
Lutetium (71)	Lu-174m	1.78E+00	3.89E-01	1.49E+01	7.79E+00	3.84E+00	2.11E+01	3.12E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.82E-09	1.48E-09	7.27E-10	3.99E-09	5.91E-09
Lutetium (71)	Lu-176	1.80E-11	3.85E+10	3.94E-01	5.62E-01	1.58E-01	2.88E-01	1.54E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.47E+00	1.07E+01	3.00E+00	5.46E+00	2.92E+01
Lutetium (71)	Lu-176m	1.67E+03	4.15E-04	2.21E+05	9.50E+04	5.26E+04	3.33E+05	1.26E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.52E-08	1.94E-08	1.08E-08	6.81E-08	2.58E-08
Lutetium (71)	Lu-177	3.81E+01	1.82E-02	2.53E+03	2.40E+03	7.00E+02	1.82E+03	6.76E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.28E-08	2.17E-08	6.32E-09	1.64E-08	6.10E-08
Lutetium (71)	Lu-177m	1.58E+00	4.39E-01	1.79E-01	2.42E-01	6.58E-02	1.28E-01	6.40E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.89E-11	5.26E-11	1.43E-11	2.79E-11	1.39E-10
Lutetium (71)	Lu-178	1.28E+04	5.40E-05	5.23E+09	5.68E+09	2.08E+09	4.65E+09	1.47E+10	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.41E-04	1.53E-04	5.59E-05	1.25E-04	3.95E-04
Lutetium (71)	Lu-178m	1.58E+04	4.39E-05	1.30E+09	2.14E+09	6.02E+08	8.74E+08	5.26E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.84E-05	4.68E-05	1.32E-05	1.91E-05	1.15E-04
Lutetium (71)	Lu-179	1.32E+03	5.24E-04	1.39E+05	2.20E+05	5.57E+04	9.28E+04	2.04E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.65E-08	5.78E-08	1.46E-08	2.44E-08	5.36E-08
Lutetium (71)	Lu-180	6.39E+04	1.08E-05	8.75E+14	1.69E+15	4.45E+14	5.02E+14	4.72E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.78E+00	9.22E+00	2.43E+00	2.74E+00	2.58E+01
Lutetium (71)	Lu-181	1.04E+05	6.66E-06	3.95E+04	6.69E+04	2.01E+04	2.55E+04	1.89E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.33E-10	2.26E-10	6.80E-11	8.62E-11	6.37E-10
Magnesium (12)	Mg-27	3.85E+04	1.80E-05	6.93E+13	1.94E+14	4.51E+13	4.21E+13	5.17E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.43E-02	2.64E-01	6.13E-02	5.72E-02	7.03E-01
Magnesium (12)	Mg-28	2.90E+02	2.39E-03	1.62E+01	5.19E+01	1.08E+01	1.47E+01	1.52E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.02E-12	9.71E-12	2.03E-12	2.76E-12	2.85E-11
Manganese (25)	Mn-50m	2.08E+05	3.33E-06	9.20E+16	2.55E+17	5.97E+16	5.11E+16	7.37E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.29E+01	1.19E+02	2.78E+01	2.38E+01	3.43E+02
Manganese (25)	Mn-51	7.88E+03	8.79E-05	1.13E+05	9.62E+04	4.00E+04	1.28E+05	6.57E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.42E-09	1.21E-09	5.02E-10	1.60E-09	8.25E-09
Manganese (25)	Mn-52	4.52E+01	1.53E-02	1.28E+00	3.34E+00	8.04E-01	7.59E-												

Indoor Worker 3-D BDCCs October 2024																	
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)													
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	BDCC DL=1 (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)
Niobium (41)	Nb-91m	4.16E+00	1.67E-01	3.58E+01	7.46E+01	1.57E+01	1.46E+02	4.86E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Niobium (41)	Nb-92	2.00E-08	3.47E+07	2.00E-08	1.46E-01	3.99E-02	5.10E-02	5.76E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Niobium (41)	Nb-92m	2.49E+01	2.78E-02	3.60E+00	7.23E+00	1.73E+00	4.24E+00	3.33E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Niobium (41)	Nb-93m	4.30E-02	1.61E+01	7.95E+04	2.82E+04	1.80E+04	2.65E+05	1.93E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Niobium (41)	Nb-94	3.41E-05	2.03E+04	9.49E-02	2.79E-01	6.31E-02	5.26E-02	8.14E-01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Niobium (41)	Nb-94m	5.82E+04	1.19E-05	1.63E+08	4.79E+08	1.08E+08	9.01E+07	1.39E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Niobium (41)	Nb-95	7.23E+00	9.59E-02	2.88E+00	8.09E+00	1.82E+00	1.58E+00	2.41E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Niobium (41)	Nb-95m	7.01E+01	9.89E-03	2.72E+01	7.27E+01	1.62E+01	1.59E+01	2.28E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Niobium (41)	Nb-96	2.60E+02	2.67E-03	1.09E+01	2.90E+01	6.93E+00	5.48E+00	8.27E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Niobium (41)	Nb-97	5.05E+03	1.37E-04	1.87E+03	6.68E+03	1.48E+03	1.02E+03	1.79E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Niobium (41)	Nb-98m	7.10E+03	9.76E-05	2.55E+02	7.08E+02	1.62E+02	1.38E+02	1.99E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Niobium (41)	Nb-99	1.46E+06	4.76E-07	5.06E+06	6.73E+06	1.88E+06	2.52E+06	1.64E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Niobium (41)	Nb-99m	1.40E+05	4.95E-06	4.86E+05	6.47E+05	1.80E+05	2.42E+05	1.57E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-134	4.29E+04	1.62E-05	2.45E+04	7.79E+04	1.35E+04	6.47E+04	2.40E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-135	3.94E+04	2.36E-05	3.95E+03	9.61E+03	1.90E+03	3.50E+03	2.78E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-136	7.19E+03	9.64E-05	4.16E+02	1.06E+03	2.33E+02	2.51E+02	2.91E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-137	9.46E+03	7.32E-05	6.94E+02	2.17E+03	4.01E+02	9.53E+02	5.97E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-138	1.20E+03	5.75E-04	7.90E+02	2.65E+03	4.77E+02	2.40E+03	7.70E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-139	1.23E+04	5.65E-05	9.24E+03	2.50E+04	4.74E+03	1.79E+04	6.60E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-139m	1.10E+03	6.28E-04	5.16E+01	1.39E+02	2.72E+01	5.11E+01	3.94E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-140	7.51E+01	9.23E-03	4.25E+01	1.48E+02	2.67E+01	1.62E+02	4.53E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-141	2.44E+03	2.84E-04	7.08E+03	2.15E+04	4.61E+03	2.73E+04	6.56E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-141m	3.52E+05	1.97E-06	1.02E+06	3.09E+06	6.63E+05	3.92E+06	9.42E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-144	3.03E-16	2.29E+15						1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-147	2.30E+01	3.01E-02	4.65E+01	1.06E+02	2.48E+01	6.98E+01	2.70E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-149	3.51E+03	1.97E-04	2.41E+03	4.53E+03	1.00E+03	1.69E+03	9.72E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-151	2.93E+04	2.37E-05	2.59E+04	5.28E+04	1.16E+04	1.95E+04	1.22E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neodymium (60)	Nd-152	3.20E+04	2.17E-05	1.29E+14	2.29E+14	5.71E+13	8.87E+13	5.14E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neon (10)	Ne-19	1.27E+06	5.46E-07	3.42E+27	5.34E+27	1.10E+27	2.22E+27	1.15E+28	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neon (10)	Ne-24	1.08E+05	6.43E-06	3.87E+03	1.30E+04	3.05E+03	2.36E+03	3.59E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Nickel (28)	Ni-56	4.16E+01	1.66E-02	9.02E-01	1.89E+00	5.12E-01	5.29E-01	6.12E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Nickel (28)	Ni-57	1.71E+02	4.06E-03	2.38E+01	3.95E+01	1.11E+01	1.34E+01	1.36E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Nickel (28)	Ni-59	6.86E-06	1.01E+05	3.50E+04	2.69E+04	1.16E+04	6.54E+04	2.63E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Nickel (28)	Ni-63	6.92E-03	1.00E+02						1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Nickel (28)	Ni-65	2.41E+03	2.87E-04	2.88E+03	8.53E+03	2.08E+03	1.79E+03	2.16E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Nickel (28)	Ni-66	1.11E+02	6.23E-03						1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neptunium (93)	Np-232	2.48E+04	2.80E-05	2.76E+05	8.16E+05	2.09E+05	1.53E+05	2.27E+06	9.77E+00	9.77E+00	9.77E+00	9.77E+00	9.77E+00	9.77E+00	9.77E+00	9.77E+00	9.77E+00
Neptunium (93)	Np-233	1.01E+04	6.89E-05	3.59E+04	3.83E+04	1.23E+04	6.34E+04	1.51E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neptunium (93)	Np-234	5.75E+01	1.21E-02	5.80E+00	7.01E+01	3.12E+00	8.19E+00	4.54E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neptunium (93)	Np-235	6.39E-01	1.09E+00	1.04E+03	1.71E+02	3.16E+02	3.16E+03	1.77E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Neptunium (93)	Np-236	4.50E-06	1.54E+05	3.79E-01	5.97E-01	1.73E-01	3.55E-01	2.53E+00	6.94E+02	6.45E+02	6.57E+02	7.40E+02	6.81E+02	3.86E+05	6.08E+05	1.76E+05	3.61E+05
Neptunium (93)	Np-236m	2.70E+02	2.57E-03	2.66E+03	2.96E+03	9.35E+02	3.66E+03	1.27E+04	1.00E-08	1.00E-08	1.00E-08	1.27E+01	1.00E-08	4.51E-09	5.02E-09	1.59E-09	6.21E-09
Neptunium (93)	Np-237	3.23E-07	2.14E+06	4.94E-01	6.59E-01	2.09E-01	6.39E-01	2.82E+00	4.60E+05	4.68E+05	4.46E+05	5.17E+05	4.86E+05	7.03E-04	9.37E-04	2.97E-04	9.09E-04
Neptunium (93)	Np-238	1.19E+02	5.80E-03	4.70E+01	8.73E+01	2.23E+01	5.57E+01	3.85E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.82E-10	3.38E-10	8.61E-11	2.15E-10
Neptunium (93)	Np-239	1.07E+02	6.46E-03	1.04E+02	1.30E+02	3.71E+01	1.64E+02	5.28E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.51E-10	5.61E-10	1.60E-10	7.11E-10
Neptunium (93)	Np-240	5.88E+03	1.18E-04	4.72E+02	8.37E+02	2.14E+02	5.23E+02	3.47E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.74E-11	6.63E-11	1.70E-11	4.14E-11
Neptunium (93)	Np-240m	5.04E+04	1.37E-05	1.17E+08	2.08E+08	5.33E+07	1.30E+08	8.62E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.08E-06	1.92E-06	4.92E-07	1.20E-06
Neptunium (93)	Np-241	2.62E+04	2.64E-05	1.79E+09	1.16E+09	9.23E+08	1.74E+09	1.28E+09	7.08E+01	7.10E+01	7.11E+01	7.12E+01	7.14E+01	3.19E+05	2.08E+05	5.76E+06	3.11E+05
Neptunium (93)	Np-242	1.66E+05	4.19E-06	1.37E+14	3.96E+14	9.86E+13	7.95E+13	1.09E+15	5.60E+06	5.59E+06	5.59E+06	5.60E+06	5.57E+06	3.88E-01	1.12E+00	2.80E-01	2.26E-01
Neptunium (93)	Np-242m	6.62E+04	1.05E-05	5.47E+13	1.58E+14	3.95E+13	3.80E+13	4.35E+14	5.60E+06	5.59E+06	5.59E+06	5.60E+06	5.57E+06	3.88E-01	1.12E+00	2.80E-01	2.26E-01
Oxygen (8)	O-14	3.10E+05	2.24E-06	8.57E+18	4.58E+19	1.01E+19	7.98E+18	1									

Indoor Worker 3-D BDCCs October 2024																			
Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)													
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDDC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/cm ²)
Radium (88)	Ra-222	5.75E+05	1.20E-06	1.90E+10	7.21E+09	5.14E+09	5.14E+10	3.09E+10	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.43E-05	5.40E-06	3.85E-06	3.85E-05	2.32E-05
Radium (88)	Ra-223	2.21E+01	3.13E-02	3.85E+01	5.24E+01	1.81E+01	4.49E+01	1.83E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.53E-10	1.02E-09	3.53E-10	8.77E-10	3.58E-09
Radium (88)	Ra-224	6.91E+01	1.00E-02	7.00E+00	2.07E+01	5.30E+00	3.89E+00	5.76E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.40E-11	1.30E-10	3.34E-11	2.44E-11	3.62E-10
Radium (88)	Ra-225	1.70E+01	4.08E-02	3.16E+01	6.23E+01	1.95E+01	2.05E+01	1.62E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.12E-10	1.60E-09	5.02E-10	5.28E-10	4.18E-09
Radium (88)	Ra-226	4.33E-04	1.60E+03	1.29E-01	3.75E-01	9.32E-02	7.47E-02	1.03E+00	1.17E-01	1.18E-01	1.17E-01	1.17E-01	1.17E-01	1.18E-01	1.30E-07	3.80E-07	9.43E-08	7.56E-08	1.04E-06
Radium (88)	Ra-227	8.63E+03	8.03E-05	2.17E+05	2.82E+05	9.37E+04	3.36E+05	1.25E+06	2.93E-01	2.92E-01	2.91E-01	3.02E-01	2.99E-01	1.11E-08	1.44E-08	4.78E-09	1.71E-08	6.36E-08	
Radium (88)	Ra-228	1.21E-01	5.75E+00	1.13E-01	2.70E-01	7.29E-02	7.36E-02	8.63E-01	2.87E+00	2.29E+00	2.43E+00	3.32E+00	2.67E+00	4.14E-10	9.90E-10	2.68E-10	2.70E-10	3.17E-09	
Radium (88)	Ra-230	3.92E+03	1.77E-04	2.19E+03	4.08E+03	1.20E+03	2.11E+03	1.57E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.49E-10	4.65E-10	1.37E-10	2.40E-10	1.71E-09	
Rubidium (37)	Rb-77	9.66E+04	7.17E-06	2.04E+04	2.41E+04	8.56E+03	1.38E+04	7.97E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.15E-11	3.73E-11	1.32E-11	2.13E-11	1.23E-10	
Rubidium (37)	Rb-78	2.06E+04	3.36E-05	5.73E+10	1.62E+11	4.35E+10	3.13E+10	4.57E+11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.21E-04	1.19E-03	3.19E-04	2.29E-04	3.35E-03	
Rubidium (37)	Rb-78m	6.35E+04	1.09E-05	1.19E+12	3.35E+12	9.01E+11	6.48E+11	9.47E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.83E-03	7.99E-03	2.15E-03	1.54E-03	2.26E-02	
Rubidium (37)	Rb-79	1.59E+04	4.36E-05	1.22E+04	1.59E+04	6.29E+03	2.15E+04	1.05E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.18E-10	1.53E-10	6.06E-11	2.07E-10	1.01E-09	
Rubidium (37)	Rb-80	6.54E+05	1.06E-06	4.45E+21	1.38E+22	3.27E+21	2.35E+21	3.74E+22	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.06E+06	3.27E+06	7.75E+05	5.58E+05	8.87E+06	
Rubidium (37)	Rb-81	1.33E+03	5.22E-04	5.22E+02	7.68E+02	2.88E+02	7.31E+02	4.33E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.18E-11	9.10E-11	3.41E-11	8.87E-11	5.12E-10	
Rubidium (37)	Rb-81m	4.19E+04	5.80E-05	4.81E+03	7.08E+03	2.66E+03	6.75E+03	3.99E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.34E-11	9.32E-11	3.50E-11	8.67E-11	5.25E-10	
Rubidium (37)	Rb-82	2.86E+05	2.42E-06	3.30E+19	5.91E+19	1.65E+19	1.88E+19	1.93E+20	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.84E+04	3.29E+04	9.18E+03	1.05E+04	1.07E+05	
Rubidium (37)	Rb-82m	9.38E+02	7.39E-04	2.66E+01	5.76E+01	1.59E+01	1.51E+01	1.97E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.50E-12	9.77E-12	2.70E-12	2.56E-12	3.34E-11	
Rubidium (37)	Rb-83	2.93E+00	2.36E-01	9.52E-01	1.45E+00	5.51E-01	9.48E-01	8.03E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.23E-11	7.95E-11	3.02E-11	5.20E-11	4.41E-10	
Rubidium (37)	Rb-84	7.72E+00	8.98E-02	1.76E+00	2.84E+00	1.08E+00	2.00E+00	1.48E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.72E-11	5.99E-11	2.29E-11	4.23E-11	3.12E-10	
Rubidium (37)	Rb-84m	1.80E+04	3.85E-05	4.10E+03	6.61E+03	2.52E+03	4.66E+03	3.44E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.72E-11	5.99E-11	2.29E-11	4.23E-11	3.12E-10	
Rubidium (37)	Rb-86	1.36E+01	5.11E-02	4.20E+02	1.26E+03	3.15E+02	2.80E+02	2.16E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.17E-09	1.55E-08	3.87E-09	3.44E-09	2.66E-08	
Rubidium (37)	Rb-86m	3.58E+05	1.93E-06	1.11E+07	3.33E+07	8.31E+06	7.39E+06	5.71E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.17E-09	1.55E-08	3.87E-09	3.44E-09	2.66E-08	
Rubidium (37)	Rb-87	1.41E-11	4.92E+10																
Rubidium (37)	Rb-88	2.05E+04	3.38E-05	1.40E+12	4.64E+12	1.16E+12	9.91E+11	1.07E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.17E-02	3.87E-02	9.65E-03	8.26E-03	8.95E-02	
Rubidium (37)	Rb-89	2.40E+04	2.88E-05	2.66E+10	2.59E+10	1.23E+10	1.53E+10	8.43E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.91E-04	1.86E-04	8.83E-05	1.10E-04	6.06E-05	
Rubidium (37)	Rb-90	1.38E+05	5.01E-06	1.28E+12	8.22E+11	3.69E+11	5.03E+12	1.14E+12	3.95E-02	3.95E-02	3.95E-02	3.95E-02	3.95E-02	1.61E-03	1.04E-03	4.66E-04	6.34E-03	1.44E-03	
Rubidium (37)	Rb-90m	8.47E+04	8.18E-06	7.82E+11	5.03E+11	2.26E+11	3.08E+12	7.00E+11	3.95E-02	3.95E-02	3.95E-02	3.95E-02	3.95E-02	1.61E-03	1.04E-03	4.66E-04	6.34E-03	1.44E-03	
Rhenium (75)	Re-178	2.76E+04	2.51E-05	9.72E+04	7.36E+04	2.76E+04	1.19E+05	2.70E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.22E-09	9.21E-10	3.46E-10	1.49E-09	3.37E-09	
Rhenium (75)	Re-179	1.87E+04	3.71E-05	2.37E+05	1.03E+05	5.61E+04	3.96E+05	3.73E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.41E-09	1.92E-09	1.04E-09	7.37E-09	6.93E-09	
Rhenium (75)	Re-180	1.49E+05	4.64E-06	6.43E+16	7.86E+16	2.38E+16	4.88E+16	2.72E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.50E+02	1.84E+02	5.57E+01	1.14E+02	6.37E+02	
Rhenium (75)	Re-181	3.05E+02	2.27E-03	5.16E+01	6.05E+01	1.96E+01	3.94E+01	2.06E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.94E-11	6.77E-11	2.26E-11	4.53E-11	2.37E-10	
Rhenium (75)	Re-182	9.49E+01	7.31E-03	3.76E+00	4.64E+00	1.45E+00	2.96E+00	1.53E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.40E-11	1.73E-11	5.39E-12	1.10E-11	5.68E-11	
Rhenium (75)	Re-182m	4.78E+02	1.45E-03	5.29E+01	6.35E+01	1.92E+01	4.11E+01	2.10E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.91E-11	4.69E-11	1.42E-11	3.04E-11	1.55E-10	
Rhenium (75)	Re-183	3.61E+00	1.92E-01	6.35E+00	3.77E+00	1.75E+00	8.65E+00	1.54E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.24E-10	3.70E-10	1.72E-10	8.50E-10	1.51E-09	
Rhenium (75)	Re-184	6.66E+00	1.04E-01	1.30E+00	1.57E+00	4.69E-01	9.70E-01	5.38E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.97E-11	8.43E-11	2.52E-11	5.20E-11	2.89E-10	
Rhenium (75)	Re-184m	1.50E+00	4.63E-01	3.44E-01	3.71E-01	1.25E-01	2.86E-01	1.39E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.19E-11	8.84E-11	2.97E-11	6.83E-11	3.32E-10	
Rhenium (75)	Re-186	6.80E+01	1.02E-02	7.79E+03	4.95E+03	2.21E+03	7.67E+03	8.48E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.14E-08	2.63E-08	1.17E-08	4.07E-08	4.50E-08	
Rhenium (75)	Re-186m	3.47E-06	2.00E+05	3.06E+01	1.29E+01	4.50E+00	4.52E+01	5.36E+01	1.64E-01	1.59E-01	1.63E-01	1.69E-01	1.70E-01	3.19E-03	1.34E-03	7.71E-04	4.71E-03	5.58E-03	
Rhenium (75)	Re-187	1.68E-11	4.12E+10																
Rhenium (75)	Re-188	3.57E+02	1.94E-03	8.17E+03	7.54E+03	3.22E+03	5.32E+03	1.30E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.35E-09	7.70E-09	3.29E-09	5.43E-09	1.33E-08	
Rhenium (75)	Re-188m	1.96E+04	3.54E-05	4.48E+05	4.14E+05	1.76E+05	2.92E+05	7.15E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.35E-09	7.70E-09	3.29E-09	5.43E-09	1.33E-08	
Rhenium (75)	Re-189	2.50E+02	2.77E-03	5.88E+03	5.55E+03	2.15E+03	4.73E+03	1.62E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.63E-09	8.14E-09	3.16E-09	6.94E-09	2.38E-08	
Rhenium (75)	Re-190	1.17E+05	5.90E-06	9.26E+15	2.15E+16	5.48E+15	5.01E+15	5.19E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.91E+01	6.74E+01	1.72E+01	1.57E+01	1.63E+02	
Rhenium (75)	Re-190m	1.90E+03	3.65E-04	1.65E+02	3.23E+02	8.73E+01	9.42E+01	8.42E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.21E-11	6.27E-11	1.70E-11	1.83E-11	1.64E-10	
Rhodium (45)	Rh-100	2.92E+02	2.37E-03	1.12E+01	2.43E+01	5.57E+00	7.16E+00	8.70E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.43E-12	1.62E-11	3.70E-12	4.76E-12	5.78E-11	
Rhodium (45)	Rh-100m	7.92E+04	8.75E-06	3.07E+03	6.70E+03	1.53E+03	1.97E+03	2.39E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.53E-12	1.64E-11	3.75E-12	4.82E-12	5.86E-11	
Rhodium (45)	Rh-101	2.10E-01	3.30E+00	6.82E-01	9.92E-01	2.15E-01	7.76E-01	3.23E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.36E-10	9.26E-10	2.01E-10	7.25E-10	3.02E-09	
Rhodium (45)	Rh-101m	5.83E+01	1.19E-02	3.71E+01	7.00E+01	1.33E+01	4.72E+01	2.68E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.25E-10	2.35E-10	4.47E-11	1.59E-10	9.01E-10	
Rhodium (45)	Rh-102	1.22E+00	5.67E-01	8.52E-01															

Indoor Worker 3-D BDCCs October 2024																			
Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)													
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/cm ²)
Rhodium (45)	Rh-99m	1.29E+03	5.37E-04	3.24E+02	6.51E+02	1.29E+02	3.08E+02	2.42E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.82E-11	9.68E-11	1.92E-11	4.59E-11	3.60E-10
Radon (86)	Rn-207	3.94E+04	1.76E-05	1.36E+03	2.27E+03	6.78E+02	8.87E+02	7.15E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.38E-11	2.32E-11	6.91E-12	9.04E-12	7.29E-11
Radon (86)	Rn-209	1.28E+04	5.42E-05	4.38E+02	6.96E+02	2.06E+02	2.63E+02	2.19E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.39E-11	2.21E-11	6.55E-12	8.33E-12	6.94E-11	
Radon (86)	Rn-210	2.53E+03	2.74E-04	4.17E+01	7.44E+01	2.22E+01	2.74E+01	2.36E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.72E-12	1.20E-11	3.57E-12	4.41E-12	3.80E-11	
Radon (86)	Rn-211	4.16E+02	1.67E-03	2.03E+01	3.70E+01	1.08E+01	1.28E+01	1.19E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.00E-11	3.65E-11	1.06E-11	1.26E-11	1.17E-10	
Radon (86)	Rn-212	1.52E+04	4.55E-05	1.25E+13	1.74E+13	6.15E+12	1.11E+13	6.88E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.36E-01	4.70E-01	1.66E-01	2.99E-01	1.86E+00	
Radon (86)	Rn-215	9.50E+12	7.29E-14																
Radon (86)	Rn-216	4.86E+11	1.43E-12																
Radon (86)	Rn-217	4.05E+10	1.71E-11																
Radon (86)	Rn-218	6.24E+08	1.11E-09	2.07E+13	7.82E+12	5.58E+12	5.58E+13	3.36E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.40E-05	5.30E-06	3.78E-06	3.78E-05	2.27E-05	
Radon (86)	Rn-219	5.52E+06	1.26E-07	3.08E+11	6.23E+11	1.85E+11	1.82E+11	1.27E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.37E-05	4.80E-05	1.42E-05	1.40E-05	9.80E-05	
Radon (86)	Rn-220	3.93E+05	1.76E-06	3.98E+04	1.18E+05	3.02E+04	2.21E+04	3.28E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.32E-11	1.28E-10	3.28E-11	2.40E-11	3.56E-10	
Radon (86)	Rn-222	6.62E+01	1.05E-02	8.53E+00	2.48E+01	6.17E+00	4.95E+00	6.82E+01	1.00E-08	1.00E-08	1.87E-08	1.00E-08	1.00E-08	5.55E-11	1.62E-10	4.02E-11	3.22E-11	4.44E-10	
Radon (86)	Rn-223	1.50E+04	4.62E-05	2.60E+04	3.54E+04	1.22E+04	3.03E+04	1.24E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.50E-10	1.02E-09	3.52E-10	8.75E-10	3.57E-09	
Ruthenium (44)	Ru-103	6.44E+00	1.08E-01	3.53E+00	1.24E+01	3.13E+00	2.06E+00	3.21E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.10E-10	3.84E-10	9.70E-11	6.38E-11	9.96E-10	
Ruthenium (44)	Ru-105	1.37E+03	5.07E-04	4.48E+02	9.93E+02	2.33E+02	2.31E+02	2.77E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.68E-11	1.48E-10	3.47E-11	3.44E-11	4.13E-10	
Ruthenium (44)	Ru-106	6.77E-01	1.02E+00																
Ruthenium (44)	Ru-107	9.71E+04	7.13E-06	2.36E+11	7.05E+11	1.79E+11	1.61E+11	1.37E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.05E-04	1.51E-03	3.82E-04	3.44E-04	2.93E-03	
Ruthenium (44)	Ru-108	8.01E+04	8.66E-06	6.04E+16	1.42E+17	4.15E+16	3.03E+16	2.75E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.58E+02	3.73E+02	1.09E+02	7.94E+01	7.19E+02	
Ruthenium (44)	Ru-92	9.98E+04	6.94E-06	4.92E+13	1.13E+14	2.83E+13	3.07E+13	2.90E+14	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.80E-02	2.02E-01	5.06E-02	5.50E-02	5.19E-01	
Ruthenium (44)	Ru-94	7.03E+03	9.86E-05	6.29E+02	1.26E+03	2.85E+02	4.52E+02	4.48E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.63E-11	3.27E-11	7.40E-12	1.17E-11	1.16E-10	
Ruthenium (44)	Ru-95	3.69E+03	1.88E-04	2.60E+02	5.26E+02	1.19E+02	2.22E+02	2.04E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.30E-11	2.62E-11	5.94E-12	1.11E-11	1.02E-10	
Ruthenium (44)	Ru-97	8.72E+01	7.95E-03	6.65E+01	1.18E+02	2.30E+01	9.37E+01	4.36E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.43E-10	2.54E-10	4.96E-11	2.02E-10	9.41E-10	
Sulfur (16)	S-35	2.89E+00	2.40E-01																
Sulphur (16)	S-37	7.21E+04	9.61E-06	3.83E+14	1.68E+15	4.02E+14	2.97E+14	4.30E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.81E-01	1.68E+00	4.00E-01	2.95E-01	4.28E+00	
Sulfur (16)	S-38	2.14E+03	3.24E-04	1.96E+02	8.82E+02	2.12E+02	1.69E+02	2.17E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.75E-12	3.04E-11	7.30E-12	5.81E-12	7.49E-11	
Antimony (51)	Sb-111	2.91E+05	2.38E-06	1.01E+05	1.66E+05	3.80E+04	9.84E+04	5.29E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.46E-11	1.23E-10	2.81E-11	7.27E-11	3.91E-10	
Antimony (51)	Sb-113	5.46E+04	1.27E-05	8.56E+04	1.66E+05	3.52E+04	6.73E+04	5.54E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.44E-10	6.68E-10	1.41E-10	2.70E-10	2.22E-09	
Antimony (51)	Sb-114	1.04E+05	6.64E-06	4.76E+15	1.05E+16	2.43E+15	2.48E+15	3.32E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.01E+01	2.22E+01	5.15E+00	5.25E+00	7.03E+01		
Antimony (51)	Sb-115	1.13E+04	6.11E-05	2.15E+03	5.14E+03	1.01E+03	1.81E+03	1.80E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.24E-11	1.01E-10	1.98E-11	3.55E-11	3.55E-10		
Antimony (51)	Sb-116	2.31E+04	3.01E-05	2.83E+11	5.82E+11	1.30E+11	1.73E+11	2.06E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.76E-03	5.68E-03	1.27E-03	1.69E-03	2.01E-02		
Antimony (51)	Sb-116m	6.04E+03	1.15E-04	1.48E+02	2.80E+02	6.58E+01	9.20E+01	9.40E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.53E-12	1.04E-11	2.45E-12	3.43E-12	3.50E-11	
Antimony (51)	Sb-117	2.17E+03	3.20E-04	2.23E+03	3.78E+03	7.38E+02	2.65E+03	1.29E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.33E-10	3.96E-10	7.72E-11	2.78E-10	1.35E-09	
Antimony (51)	Sb-118	1.01E+05	6.85E-06	1.28E+17	2.94E+17	4.74E+16	3.45E+17	1.32E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.89E+02	6.65E+02	1.07E+02	7.82E+02	2.98E+03		
Antimony (51)	Sb-118m	5.71E+03	5.71E-04	2.71E+01	6.11E+01	1.32E+01	2.42E+01	2.20E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.11E-12	1.15E-11	2.48E-12	4.56E-12	4.14E-11	
Antimony (51)	Sb-119	1.59E+02	4.36E-03	3.01E+04	1.52E+04	6.45E+03	8.37E+04	1.88E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.38E-08	2.20E-08	9.37E-09	1.22E-07	2.73E-08		
Antimony (51)	Sb-120	2.29E+04	3.02E-05	2.20E+12	5.30E+12	8.09E+11	6.83E+12	2.51E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.23E-02	5.38E-02	8.22E-03	6.93E-02	2.55E-01		
Antimony (51)	Sb-120m	4.39E+01	1.58E-02	1.35E+00	2.57E+00	5.89E-01	1.01E+00	7.88E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.18E-12	1.36E-11	3.12E-12	5.35E-12	4.16E-11	
Antimony (51)	Sb-122	9.29E+01	7.46E-03	8.04E+01	2.34E+02	5.81E+01	3.84E+01	5.78E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.05E-10	5.96E-10	1.48E-10	9.80E-11	1.47E-09	
Antimony (51)	Sb-122m	8.69E+04	7.97E-06	7.51E+04	2.19E+05	5.44E+04	3.59E+04	5.41E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.05E-10	5.96E-10	1.48E-10	9.79E-11	1.47E-09	
Antimony (51)	Sb-124	4.20E+00	1.65E-01	3.34E-01	1.16E+00	2.68E-01	1.88E-01	3.15E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.91E-11	6.62E-11	1.54E-11	1.08E-11	1.80E-10	
Antimony (51)	Sb-124m	2.35E+05	2.95E-06	2.49E+04	8.63E+04	2.00E+04	1.40E+04	2.35E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.55E-11	8.83E-11	2.05E-11	1.44E-11	2.40E-10	
Antimony (51)	Sb-124n	1.80E+04	3.84E-05	1.91E+03	6.62E+03	1.53E+03	1.08E+03	1.80E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.55E-11	8.83E-11	2.05E-11	1.44E-11	2.40E-10	
Antimony (51)	Sb-125	2.51E-01	2.76E+00	5.13E-01	1.14E+00	2.41E-01	4.41E-01	3.82E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.95E-10	1.10E-09	2.33E-10	4.26E-10	3.69E-09	
Antimony (51)	Sb-126	2.05E+01	3.38E-02	5.07E-01	1.52E+00	3.59E-01	2.63E-01	4.24E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.05E-12	1.81E-11	4.28E-12	3.15E-12	5.07E-11	
Antimony (51)	Sb-126m	1.90E+04	3.64E-05	3.36E+03	1.01E+04	2.38E+03	1.75E+03	2.81E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.32E-11	1.29E-10	3.05E-11	2.24E-11	3.62E-10	
Antimony (51)	Sb-127	6.57E+01	1.05E-02	2.55E+01	6.48E+														

Indoor Worker 3-D BDCCs October 2024																			
Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)													
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/cm ²)	
Selenium (34)	Se-75	2.11E+00	3.28E-01	1.00E+00	9.77E-01	3.82E-01	8.65E-01	4.38E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.91E-11	6.74E-11	2.63E-11	5.96E-11	3.02E-10
Selenium (34)	Se-77m	1.26E+06	5.50E-07	1.89E+25	1.61E+25	8.81E+24	1.57E+25	8.44E+25	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.25E+09	1.92E+09	8.08E+08	1.87E+09	1.00E+10
Selenium (34)	Se-79	2.35E-06	2.95E+05						1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08					
Selenium (34)	Se-79m	9.29E+04	7.46E-06	1.21E+18	8.32E+17	3.84E+17	2.92E+18	6.06E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.99E+03	1.37E+03	6.34E+02	4.81E+03	1.00E+04
Selenium (34)	Se-81	1.97E+04	3.51E-05	1.52E+15	2.90E+15	1.01E+15	9.48E+14	1.42E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.21E+01	2.31E+01	8.02E+00	7.55E+00	1.13E+01
Selenium (34)	Se-81m	6.38E+03	1.09E-04	2.00E+05	1.48E+05	6.62E+04	4.52E+05	9.58E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.93E-09	3.65E-09	1.64E-09	1.12E-08	2.37E-08
Selenium (34)	Se-83	1.63E+04	4.24E-05	4.33E+07	1.03E+08	3.38E+07	2.39E+07	7.16E+07	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.27E-07	1.02E-06	3.33E-07	2.35E-07	7.06E-07
Selenium (34)	Se-83m	3.12E+05	2.22E-06	8.58E+08	2.03E+09	6.72E+08	4.73E+08	1.37E+09	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.43E-07	1.05E-06	3.47E-07	2.44E-07	7.10E-07
Selenium (34)	Se-84	1.17E+05	5.90E-06	1.68E+08	5.24E+08	1.23E+08	1.03E+08	1.41E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.34E-07	7.27E-07	1.71E-07	1.42E-07	1.95E-06
Silicon (14)	Si-31	2.32E+03	2.99E-04	3.21E+08	3.03E+08	1.35E+08	1.33E+08	1.09E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.33E-06	7.88E-06	3.51E-06	3.46E-06	2.84E-06
Silicon (14)	Si-32	5.25E-03	1.32E+02						1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08					
Samarium (62)	Sm-139	1.42E+05	4.89E-06	1.07E+05	2.89E+05	5.47E+04	2.07E+05	7.63E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.03E-10	5.50E-10	1.04E-10	3.93E-10	1.45E-09
Samarium (62)	Sm-140	2.46E+04	2.82E-05	1.39E+04	4.86E+04	8.73E+03	5.29E+04	1.48E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.54E-10	5.37E-10	9.65E-11	5.85E-10	1.64E-09
Samarium (62)	Sm-141	3.57E+04	1.94E-05	1.04E+05	3.15E+05	6.75E+04	4.00E+05	9.60E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.95E-10	2.41E-09	5.18E-10	3.06E-09	7.36E-09
Samarium (62)	Sm-141m	1.61E+04	4.30E-05	4.68E+04	1.42E+05	3.05E+04	1.80E+05	4.33E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.95E-10	2.41E-09	5.18E-10	3.06E-09	7.36E-09
Samarium (62)	Sm-142	5.02E+03	1.38E-04	2.53E+03	7.53E+03	1.67E+03	8.21E+03	2.57E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.39E-10	4.13E-10	9.16E-11	4.50E-10	1.41E-09
Samarium (62)	Sm-143	4.16E+04	1.66E-05	3.21E+04	9.66E+04	1.96E+04	5.96E+04	3.23E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.14E-10	6.44E-10	1.31E-10	3.97E-10	2.15E-09
Samarium (62)	Sm-143m	3.31E+05	2.09E-06	2.55E+05	7.68E+05	1.56E+05	4.74E+05	2.57E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.14E-10	6.44E-10	1.31E-10	3.97E-10	2.15E-09
Samarium (62)	Sm-145	7.44E-01	9.32E-01	1.22E+01	1.08E+01	4.79E+00	3.90E+01	2.35E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.61E-09	4.08E-09	1.81E-09	1.48E-08	8.87E-09
Samarium (62)	Sm-146	6.73E-09	1.03E+08						1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08					
Samarium (62)	Sm-147	6.54E-12	1.06E+11						1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08					
Samarium (62)	Sm-148	9.90E-17	7.00E+15						1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08					
Samarium (62)	Sm-151	7.70E-03	9.00E+01	8.47E+08	1.60E+08	1.69E+08	1.66E+09	2.32E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.22E+01	6.08E+00	6.42E+00	6.33E+01	8.88E+00
Samarium (62)	Sm-153	1.31E+02	5.31E-03	9.71E+02	1.26E+03	3.86E+02	1.99E+03	2.93E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.21E-09	2.87E-09	8.79E-10	4.53E-09	6.66E-09
Samarium (62)	Sm-155	1.63E+04	4.24E-05	1.75E+06	1.72E+06	5.16E+05	1.90E+06	3.94E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.21E-08	3.18E-08	9.49E-09	3.50E-08	7.26E-08
Samarium (62)	Sm-156	6.46E+02	1.07E-03	1.34E+02	3.06E+02	7.13E+01	7.88E+01	8.61E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.29E-11	1.44E-10	3.34E-11	3.69E-11	4.04E-10
Samarium (62)	Sm-157	4.54E+04	1.53E-05	3.31E+04	5.56E+04	1.35E+04	3.52E+04	1.47E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.23E-10	3.73E-10	9.07E-11	2.37E-10	9.89E-10
Tin (50)	Sn-106	1.90E+05	3.65E-06	3.13E+14	1.00E+15	2.26E+14	1.82E+14	2.86E+15	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.39E-01	1.08E+00	2.45E-01	1.97E-01	3.10E+00
Tin (50)	Sn-108	3.54E+04	1.96E-05	2.02E+03	5.09E+03	1.11E+03	1.24E+03	1.69E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.20E-11	3.02E-11	6.57E-12	7.33E-12	9.99E-11
Tin (50)	Sn-109	2.02E+04	3.42E-05	4.54E+03	9.28E+03	1.91E+03	4.97E+03	3.13E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.74E-11	9.70E-11	1.99E-11	5.19E-11	3.27E-10
Tin (50)	Sn-110	1.48E+03	4.69E-04	1.60E+02	3.58E+02	7.53E+01	1.01E+02	1.22E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.31E-11	5.17E-11	1.09E-11	1.45E-11	1.77E-10
Tin (50)	Sn-111	1.03E+04	6.72E-05	2.14E+03	4.06E+03	8.28E+02	2.83E+03	1.44E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.47E-11	8.48E-11	1.73E-11	5.91E-11	3.00E-10
Tin (50)	Sn-113	3.20E+00	3.15E-01	3.38E+00	6.56E+00	1.39E+00	2.66E+00	2.19E+01	2.15E-05	1.93E-05	1.85E-05	2.93E-05	1.41E-05	3.37E-10	6.55E-10	1.39E-10	2.65E-10	2.18E-09	
Tin (50)	Sn-113m	1.70E+04	4.07E-05	2.87E+04	5.57E+04	1.18E+04	2.26E+04	1.86E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.70E-10	7.18E-10	1.52E-10	2.91E-10	2.39E-09
Tin (50)	Sn-117m	1.84E+01	3.77E-02	2.71E+01	4.11E+01	8.77E+00	2.75E+01	1.39E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.35E-10	5.08E-10	1.08E-10	3.39E-10	1.72E-09
Tin (50)	Sn-119m	8.63E-01	8.03E-01	6.92E+02	3.38E+02	1.48E+02	1.88E+03	4.11E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.85E-07	9.04E-08	3.97E-08	5.04E-07	1.10E-07
Tin (50)	Sn-121	2.25E+02	3.09E-03						1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08					
Tin (50)	Sn-121m	1.58E-02	4.39E+01	2.75E+03	1.52E+03	7.15E+02	7.84E+03	2.22E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.09E-05	2.26E-05	1.06E-05	1.17E-04	3.30E-05
Tin (50)	Sn-123	1.96E+00	3.54E-01	1.06E+04	2.26E+04	7.10E+03	6.73E+03	1.24E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.29E-06	2.75E-06	8.66E-07	8.21E-07	1.52E-06
Tin (50)	Sn-123m	9.09E+03	7.62E-05	3.50E+04	4.07E+04	1.32E+04	1.59E+04	8.80E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.20E-10	1.07E-09	3.46E-10	4.19E-10	2.31E-09
Tin (50)	Sn-125	2.62E+01	2.64E-02	3.05E+01	7.56E+01	1.69E+01	2.22E+01	2.17E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.82E-10	6.99E-10	1.56E-10	2.05E-10	2.00E-09
Tin (50)	Sn-125m	3.83E+04	1.81E-05	7.81E+04	1.73E+05	3.67E+04	6.72E+04	5.82E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.95E-10	1.10E-09	2.33E-10	4.26E-10	3.69E-09
Tin (50)	Sn-126	3.01E-06	2.30E+05	5.20E-02	1.53E-01	3.69E-02	2.68E-02	4.14E-01	5.48E-01	5.47E-01	5.48E-01	5.48E-01	5.46E-01	4.22E-06	1.24E-05	3.00E-06	2.18E-06	3.36E-05	
Tin (50)	Sn-127	2.89E+03	2.40E-04	1.90E+02	5.04E+02	1.21E+02	1.06E+02	1.40E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08							

Indoor Worker 3-D BDCCs October 2024																			
Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)													
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/kg)	DL=1 (mg/cm ²)
Tellurium (52)	Te-119m	5.38E+01	1.29E-02	3.91E+00	8.10E+00	1.81E+00	3.24E+00	2.61E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.68E-11	3.47E-11	7.75E-12	1.39E-11	1.12E-10
Tellurium (52)	Te-121	1.32E+01	5.25E-02	3.27E+00	7.41E+00	1.46E+00	2.94E+00	2.80E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.81E-11	1.32E-10	2.59E-11	5.23E-11	4.99E-10
Tellurium (52)	Te-121m	1.64E+00	4.22E-01	4.61E-01	1.01E+00	2.01E-01	4.46E-01	3.63E+00	3.81E-04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.59E-11	1.44E-10	2.88E-11	6.38E-11	5.19E-10
Tellurium (52)	Te-123	1.16E-15	6.00E+14	2.62E+06	4.47E+05	5.17E+05	4.51E+06	1.13E+06	3.73E-05	1.15E-02	2.12E-08	1.42E-08	5.17E-06	5.41E+11	9.24E+10	1.07E+11	9.32E+11	2.33E+11	
Tellurium (52)	Te-123m	2.12E+00	3.27E-01	4.68E+00	7.00E+00	1.86E+00	4.01E+00	2.20E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.26E-10	7.88E-10	2.09E-10	4.51E-10	2.48E-09
Tellurium (52)	Te-125m	4.41E+00	1.57E-01	2.42E+02	1.60E+02	7.21E+01	7.51E+02	2.22E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.33E-08	8.80E-09	3.97E-09	4.13E-08	1.22E-08
Tellurium (52)	Te-127	6.49E+02	1.07E-03	3.70E+06	7.73E+06	2.09E+06	1.99E+06	9.74E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.40E-06	2.93E-06	7.94E-07	7.56E-07	3.70E-06
Tellurium (52)	Te-127m	2.32E+00	2.99E-01	1.12E+03	8.25E+02	3.49E+02	2.49E+03	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.19E-07	8.76E-08	3.71E-08	2.64E-07	1.25E-07
Tellurium (52)	Te-129	5.23E+03	1.32E-04	5.45E+04	1.10E+05	2.50E+04	9.05E+04	2.47E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.61E-09	5.27E-09	1.20E-09	4.33E-09	1.18E-08
Tellurium (52)	Te-129m	7.53E+00	9.21E-02	5.84E+01	1.28E+02	2.74E+01	1.26E+02	3.05E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.94E-09	4.26E-09	9.12E-10	4.19E-09	1.01E-08
Tellurium (52)	Te-131	1.46E+04	4.76E-05	6.54E+03	6.35E+04	1.68E+04	1.43E+04	6.76E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.14E-10	1.11E-09	2.94E-10	2.49E-10	1.18E-09
Tellurium (52)	Te-131m	2.02E+02	3.42E-03	1.77E+01	4.29E+01	9.78E+00	1.16E+01	1.15E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.22E-11	5.38E-11	1.23E-11	1.45E-11	1.44E-10
Tellurium (52)	Te-132	7.89E+01	8.78E-03	3.25E+00	9.47E+00	2.14E+00	1.76E+00	2.70E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.05E-11	3.07E-11	6.95E-12	5.72E-12	8.75E-11
Tellurium (52)	Te-133	2.91E+04	2.38E-05	1.23E+04	3.89E+04	9.94E+03	6.78E+03	9.71E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.09E-10	3.45E-10	8.80E-11	6.01E-11	8.60E-10
Tellurium (52)	Te-133m	6.57E+03	1.05E-04	3.66E+02	9.30E+02	2.16E+02	2.58E+02	6.31E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.44E-11	3.65E-11	8.46E-12	8.47E-12	1.01E-10
Tellurium (52)	Te-134	8.71E+03	7.95E-05	2.87E+02	7.42E+02	1.72E+02	1.63E+02	2.05E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.55E-12	2.21E-11	5.14E-12	4.86E-12	6.13E-11
Thorium (90)	Th-223	3.64E+07	1.90E-08	4.24E+32	5.55E+32	1.87E+32	4.10E+32	1.86E+33	7.94E-06	6.31E-06	5.01E-06	6.31E-06	6.31E-06	6.31E-06	5.03E+15	6.60E+15	2.22E+15	4.87E+15	2.21E+16
Thorium (90)	Th-224	2.08E+07	3.33E-08	1.13E+33	1.43E+33	4.63E+32	1.03E+33	5.10E+33	5.01E-06	6.31E-06	5.01E-06	6.31E-06	6.31E-06	6.31E-06	2.36E+16	2.99E+16	9.68E+15	2.14E+16	1.06E+17
Thorium (90)	Th-226	1.19E+04	5.82E-05	3.90E+08	1.49E+08	1.06E+08	1.05E+09	6.39E+08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.44E-05	5.47E-06	3.89E-06	3.85E-05	2.35E-05
Thorium (90)	Th-227	1.35E+01	5.12E-02	1.05E+01	1.37E+01	4.54E+00	1.63E+01	6.05E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.42E-10	4.44E-10	1.48E-10	5.30E-10	1.97E-09
Thorium (90)	Th-228	3.63E-01	1.91E+00	1.21E-01	3.59E-01	9.20E-02	6.74E-02	9.99E-01	1.94E-02	1.93E-02	1.94E-02	1.94E-02	1.93E-02	1.93E-02	1.48E-10	4.38E-10	1.12E-10	8.23E-11	1.22E-09
Thorium (90)	Th-229	9.44E-05	7.34E+03	9.35E-01	1.21E+00	4.17E-01	9.60E-01	4.82E+00	5.61E-01	5.38E-01	5.43E-01	5.96E-01	5.60E-01	5.60E-01	4.40E-06	5.68E-06	1.96E-06	4.52E-06	2.27E-05
Thorium (90)	Th-230	9.19E-06	7.54E+04	1.40E-01	4.07E-01	1.01E-01	8.12E-02	1.12E+00	8.94E+03	8.94E+03	8.94E+03	8.94E+03	8.94E+03	8.94E+03	6.79E-06	1.90E-05	4.91E-06	3.94E-06	5.42E-05
Thorium (90)	Th-231	2.38E+02	2.91E-03	4.70E+03	4.09E+03	1.52E+03	1.40E+04	1.90E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.86E-09	7.70E-09	2.87E-09	2.63E-08	3.58E-08
Thorium (90)	Th-232	4.93E-11	1.41E+10	6.68E-02	1.64E-01	4.41E-02	4.29E-02	5.15E-01	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	6.10E-01	1.50E+00	4.02E-01	3.92E-01	4.70E+00
Thorium (90)	Th-233	1.63E+04	4.24E-05	1.26E+04	1.77E+04	5.22E+03	1.95E+04	7.32E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.50E-10	4.89E-10	1.44E-10	5.40E-10	2.19E-09
Thorium (90)	Th-234	1.05E+01	6.60E-02	2.67E+02	3.99E+02	1.20E+02	2.91E+02	1.31E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.15E-08	1.73E-08	5.18E-09	1.26E-08	5.68E-08
Thorium (90)	Th-235	5.13E+04	1.35E-05	1.03E+13	3.17E+12	2.68E+12	1.83E+13	2.87E+12	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.16E-02	2.82E-02	2.38E-02	1.63E-01	2.55E-02
Thorium (90)	Th-236	9.71E+03	7.13E-05	2.02E+03	3.95E+03	1.10E+03	1.59E+03	1.43E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.54E-11	1.86E-10	5.17E-11	7.50E-11	6.77E-10
Titanium (22)	Ti-44	1.16E-02	6.00E+01	1.30E-01	3.31E-01	8.25E-02	7.32E-02	9.29E-01	2.89E-03	2.84E-03	2.87E-03	2.91E-03	2.81E-03	2.81E-03	9.62E-10	2.45E-09	6.10E-10	5.41E-10	6.87E-09
Titanium (22)	Ti-45	1.97E+03	3.52E-04	2.46E+04	1.97E+04	8.37E+03	4.19E+04	1.71E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.09E-09	8.72E-10	3.71E-10	1.86E-09	7.56E-09
Titanium (22)	Ti-51	6.32E+04	1.10E-05	1.76E+16	6.06E+16	1.51E+16	1.26E+16	9.53E+16	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.76E+01	9.48E+01	2.36E+01	1.98E+01	1.49E+02
Titanium (22)	Ti-52	2.14E+05	3.23E-06	2.11E+16	5.95E+16	1.43E+16	1.24E+16	1.59E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.94E+00	2.80E+01	6.73E+00	5.85E+00	7.49E+01
Thallium (81)	Tl-190	1.40E+05	4.95E-06	6.41E+03	1.37E+04	3.81E+03	4.71E+03	3.86E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.69E-11	3.62E-11	1.00E-11	1.24E-11	1.02E-10
Thallium (81)	Tl-190m	9.84E+04	7.04E-06	4.51E+03	9.66E+03	2.67E+03	3.31E+03	2.72E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.69E-11	3.62E-11	1.00E-11	1.24E-11	1.02E-10	
Thallium (81)	Tl-194	1.10E+04	6.28E-05	2.68E+03	4.07E+03	1.28E+03	1.58E+03	1.17E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.13E-11	1.39E-10	4.35E-11	5.39E-11	3.98E-10	
Thallium (81)	Tl-194m	1.11E+04	6.24E-05	3.01E+02	5.48E+02	1.56E+02	1.64E+02	1.64E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.02E-11	1.86E-11	5.29E-12	5.55E-12	5.54E-11	
Thallium (81)	Tl-195	5.23E+03	1.32E-04	4.56E+02	6.02E+02	2.25E+02	4.51E+02	2.51E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.30E-11	4.35E-11	1.62E-11	3.26E-11	1.81E-10	
Thallium (81)	Tl-196	3.30E+03	2.10E-04	2.32E+02	4.15E+02	1.23E+02	1.42E+02	1.23E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.67E-11	4.79E-11	1.42E-11	1.64E-11	1.42E-10	
Thallium (81)	Tl-197	2.14E+03	3.24E-04	8.41E+02	9.34E+02	3.59E+02	8.27E+02	3.43E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.50E-10	1.67E-10	6.42E-11	1.48E-10	6.14E-10	
Thallium (81)	Tl-198	1.15E+03	6.05E-04	6.87E+01	1.21E+02	3.57E+01	4.20E+01	3.66E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.30E-11	4.07E-11	1.20E-11	1.41E-11	1.23E-10	
Thallium (81)	Tl-198m	3.25E+03	2.13E-04	1.70E+02	2.67E+02	8.22E+01	9.93E+01	8.50E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.02E-11	3.16E-11	9.73E-12	1.18E-11	1.01E-10	
Thallium (81)	Tl-199	8.18E+02	8.47E-04	7.38E+02	7.37E+02	2.88E+02	7.78E+02	2.75E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.48E-10	3.48E-10	1.36E-10	3.67E-10	1.30E-09	
Thallium (81)	Tl-200	2.33E+02	2.98E-03	2.40E+01	3.90E+01	1.16E+01	1.48E+01	1.16E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	4.00E-11	6.50E-11	1.94E-11	2.46E-11	1.93E-10	
Thallium (81)	Tl-201	8.33E+01	8.32E-03	3.44E+02	2.20E+02	1.01E+02	5.27E+02	8.93E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.61E-09	1.03E-09	4.75E-10	2.47E-09	4.18E-09	
Thallium (81)	Tl-202	2.07E+01	3.35E-02	9.46E+00	1.20E+01	4.18E+00	6.45E+00	3.81E+01	1.00E-08										

Indoor Worker 3-D BDCCs October 2024																	
Radionuclides		Isotope-specific Information				Building Dose Compliance Concentrations (BDCCs)											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground Plane	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose
				BDCC DL=1 (pCi/g)	1cm BDCC DL=1 (pCi/g)	5cm BDCC DL=1 (pCi/g)	15cm BDCC DL=1 (pCi/g)	BDCC DL=1 (pCi/cm ²)	Start Time External Exposure Soil Volume (yrs)	Start Time External Exposure Soil Volume 1cm (yrs)	Start Time External Exposure Soil Volume 5cm (yrs)	Start Time External Exposure Soil Volume 15cm (yrs)	Start Time External Exposure Ground Plane (yrs)	BDCC DL=1 (mg/kg)	1cm BDCC DL=1 (mg/kg)	5cm BDCC DL=1 (mg/kg)	15cm BDCC DL=1 (mg/kg)
Uranium (92)	U-227	3.31E+05	2.09E-06	8.18E+19	1.06E+20	3.43E+19	9.47E+19	3.91E+20	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Uranium (92)	U-228	4.00E+04	1.73E-05	6.60E+16	8.05E+16	2.60E+16	7.14E+16	3.22E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Uranium (92)	U-230	1.22E+01	5.70E-02	1.88E+03	2.16E+03	7.20E+02	3.68E+03	1.12E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Uranium (92)	U-231	6.02E+01	1.15E-02	1.14E+02	1.11E+02	3.86E+01	3.07E+02	5.84E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Uranium (92)	U-232	1.01E-02	6.89E+01	1.12E-01	3.31E-01	8.50E-02	6.23E-02	9.23E-01	9.77E+00	9.77E+00	9.77E+00	9.77E+00	9.77E+00	9.77E+00	9.77E+00	9.77E+00	9.77E+00
Uranium (92)	U-233	4.35E-06	1.59E+05	1.08E+00	1.40E+00	4.84E-01	1.11E+00	5.59E+00	3.42E+04	3.42E+04	3.42E+04	3.42E+04	3.42E+04	3.42E+04	3.42E+04	3.42E+04	3.42E+04
Uranium (92)	U-234	2.82E-06	2.46E+05	2.17E-01	6.32E-01	1.57E-01	1.26E-01	1.73E+00	1.88E+05	1.88E+05	1.88E+05	1.88E+05	1.88E+05	1.88E+05	1.88E+05	1.88E+05	1.88E+05
Uranium (92)	U-235	9.84E-10	7.04E+08	4.58E-01	7.54E-01	2.29E-01	8.03E-01	2.77E+00	4.44E+05	4.47E+05	4.46E+05	4.45E+05	4.44E+05	4.44E+05	4.44E+05	4.44E+05	4.44E+05
Uranium (92)	U-235m	1.40E+04	4.95E-05	4.05E+01	9.96E+01	2.67E+01	2.60E+01	3.13E+02	2.17E+08	2.17E+08	2.17E+08	2.17E+08	2.17E+08	2.17E+08	2.17E+08	2.17E+08	2.17E+08
Uranium (92)	U-236	2.96E-08	2.34E+07	5.04E+01	5.54E+01	1.72E+01	9.89E+01	2.24E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Uranium (92)	U-237	3.75E+01	1.85E-02	1.28E-01	3.71E-01	9.24E-02	7.45E-02	1.02E+00	3.52E+06	3.52E+06	3.52E+06	3.52E+06	3.52E+06	3.52E+06	3.52E+06	3.52E+06	3.52E+06
Uranium (92)	U-238	1.55E-10	4.47E+09	1.51E+04	1.88E+04	5.37E+03	2.38E+04	7.64E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Uranium (92)	U-239	1.55E+04	4.46E-05	3.48E+02	6.13E+02	1.59E+02	3.67E+02	2.43E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Uranium (92)	U-240	4.31E+02	1.61E-03	5.57E+12	9.48E+12	2.63E+12	3.80E+12	2.46E+13	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Uranium (92)	U-242	2.17E+04	3.20E-05	3.18E+05	2.98E+05	1.26E+05	3.21E+05	1.67E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-47	1.12E+04	6.20E-05	1.58E+01	4.38E-02	7.23E-01	2.00E+00	4.85E-01	4.43E-01	6.14E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-48	1.58E+01	4.38E-02	7.23E-01	2.00E+00	4.85E-01	4.43E-01	6.14E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-49	7.67E-01	9.04E-01	2.00E-01	4.97E-01	1.28E-01	1.43E-01	1.57E+00	1.13E-04	2.25E-07	2.25E-08	2.25E-08	7.13E-07	3.32E+00	4.19E+06	1.04E+07	2.69E+06
Vanadium (23)	V-50	4.62E-18	1.50E-17	1.72E+16	4.87E+16	1.17E+16	1.01E+16	1.05E+17	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-52	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-53	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-54	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-55	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-56	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-57	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-58	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-59	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-60	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-61	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-62	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-63	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-64	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-65	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-66	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-67	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-68	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-69	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-70	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-71	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-72	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-73	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-74	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-75	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-76	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-77	2.26E+05	3.06E-06	3.43E+02	3.63E+02	1.14E+02	2.66E+02	1.18E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-78	9.73E+04	7.12E-06	1.10E+18	3.71E+18	8.89E+17	8.07E+17	9.55E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
Vanadium (23)	V-79	2.26E+05	3.06E-06	3.43E+02	3												

Indoor Worker 3-D BDCCs October 2024																				
Radionuclides		Isotope-specific Information		Building Dose Compliance Concentrations (BDCCs)																
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Peak Dose	Soil Volume	Soil Volume	Soil Volume	Soil Volume	Ground	
				BDCC	1cm BDCC	5cm BDCC	15cm BDCC	Plane	Start Time	Start Time	Start Time	Start Time	Start Time	DL=1	DL=1	DL=1	DL=1	DL=1	DL=1	DL=1
				DL=1	DL=1	DL=1	DL=1	DL=1	External Exposure	External Exposure	External Exposure	External Exposure	External Exposure	External Exposure	DL=1	DL=1	DL=1	DL=1	DL=1	DL=1
				(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/cm ²)	Soil Volume	Soil Volume 1cm	Soil Volume 5cm	Soil Volume 15cm	Soil Volume 15cm	Soil Volume 15cm	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/cm ²)
Ytterbium (70)	Yb-164	4.81E+03	1.44E-04	2.61E+03	3.14E+03	7.48E+02	2.43E+03	9.21E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.73E-10	2.08E-10	4.95E-11	1.61E-10	6.10E-10	
Ytterbium (70)	Yb-165	3.68E+04	1.88E-05	1.16E+04	1.46E+04	3.46E+03	8.78E+03	4.21E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.01E-10	1.27E-10	3.01E-11	7.64E-11	3.66E-10	
Ytterbium (70)	Yb-166	1.07E+02	6.47E-03	7.17E+00	1.07E+01	2.49E+00	4.27E+00	3.23E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.16E-11	3.20E-11	7.49E-12	1.29E-11	9.70E-11	
Ytterbium (70)	Yb-167	2.08E+04	3.33E-05	5.23E+04	4.45E+04	1.25E+04	5.67E+04	1.35E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	8.14E-10	6.92E-10	1.94E-10	8.82E-10	2.11E-09	
Ytterbium (70)	Yb-169	7.90E+00	8.77E-02	5.12E+00	3.61E+00	1.02E+00	4.32E+00	9.55E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.12E-10	1.50E-10	4.25E-11	1.79E-10	3.97E-10	
Ytterbium (70)	Yb-175	6.04E+01	1.15E-02	4.18E+03	6.37E+03	1.79E+03	2.71E+03	1.74E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.35E-08	3.58E-08	1.01E-08	1.52E-08	9.78E-08	
Ytterbium (70)	Yb-177	3.18E+03	2.18E-04	1.15E+04	1.71E+04	4.58E+03	8.50E+03	3.79E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.25E-09	1.85E-09	4.95E-10	9.19E-10	4.10E-09	
Ytterbium (70)	Yb-178	4.92E+03	1.41E-04	4.26E+04	4.83E+04	1.74E+04	3.60E+04	1.25E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.99E-09	3.39E-09	1.22E-09	2.53E-09	8.76E-09	
Ytterbium (70)	Yb-179	4.55E+04	1.52E-05	4.79E+06	7.58E+06	1.92E+06	3.19E+06	7.03E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.65E-08	5.78E-08	1.46E-08	2.44E-08	5.36E-08	
Zinc (30)	Zn-60	1.53E+05	4.53E-06	3.37E+09	8.90E+09	2.16E+09	1.84E+09	2.57E+10	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.56E-06	6.77E-06	1.64E-06	1.40E-06	1.96E-05	
Zinc (30)	Zn-61	2.45E+05	2.83E-06	2.10E+05	2.19E+05	8.65E+04	1.32E+05	1.02E+06	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.01E-10	1.06E-10	4.17E-11	6.39E-11	4.93E-10	
Zinc (30)	Zn-62	6.61E+02	1.05E-03	2.82E+02	3.68E+02	1.34E+02	2.71E+02	1.90E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.13E-11	6.69E-11	2.45E-11	4.93E-11	3.46E-10	
Zinc (30)	Zn-63	9.47E+03	7.32E-05	1.32E+04	2.65E+04	7.14E+03	7.82E+03	8.49E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.71E-10	3.43E-10	9.22E-11	1.01E-10	1.10E-09	
Zinc (30)	Zn-65	1.04E+00	6.69E-01	8.12E-01	8.42E-01	3.36E-01	7.49E-01	5.39E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.88E-11	1.02E-10	4.09E-11	9.11E-11	6.56E-10	
Zinc (30)	Zn-69	6.46E+03	1.07E-04	2.58E+11	3.60E+11	1.56E+11	1.70E+11	4.49E+10	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	5.35E-03	7.46E-03	3.23E-03	3.52E-03	9.31E-04	
Zinc (30)	Zn-69m	4.41E+02	1.57E-03	3.63E+02	9.66E+02	2.75E+02	1.97E+02	2.58E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.10E-10	2.93E-10	8.33E-11	5.97E-11	7.82E-10	
Zinc (30)	Zn-71	1.49E+05	4.66E-06	7.97E+17	2.37E+18	6.74E+17	4.53E+17	4.81E+18	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	7.39E+02	2.19E+03	6.25E+02	4.20E+02	4.46E+03	
Zinc (30)	Zn-71m	1.53E+03	4.52E-04	1.05E+02	3.03E+02	8.19E+01	5.32E+01	7.62E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	9.46E-12	2.73E-11	7.36E-12	4.78E-12	6.85E-11	
Zinc (30)	Zn-72	1.31E+02	5.31E-03	6.39E+00	1.78E+01	4.28E+00	3.68E+00	5.29E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	6.84E-12	1.90E-11	4.59E-12	3.94E-12	5.66E-11	
Zirconium (40)	Zr-85	4.63E+04	1.50E-05	5.64E+03	1.06E+04	3.26E+03	5.21E+03	4.50E+04	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.01E-11	3.77E-11	1.16E-11	1.85E-11	1.60E-10	
Zirconium (40)	Zr-86	3.68E+02	1.88E-03	7.86E+00	1.83E+01	4.83E+00	5.10E+00	6.33E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.57E-12	8.29E-12	2.19E-12	2.31E-12	2.87E-11	
Zirconium (40)	Zr-87	3.61E+03	1.92E-04	6.72E+02	1.22E+03	3.43E+02	6.33E+02	5.28E+03	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.14E-11	5.70E-11	1.60E-11	2.96E-11	2.47E-10	
Zirconium (40)	Zr-88	3.03E+00	2.28E-01	1.39E-01	3.05E-01	8.73E-02	1.30E-01	1.21E+00	3.06E-02	2.43E-02	1.29E-02	4.16E-02	2.96E-02	2.96E-02	7.84E-12	1.71E-11	4.92E-12	7.33E-12	6.82E-11	
Zirconium (40)	Zr-89	7.74E+01	8.95E-03	1.13E+01	2.22E+01	5.92E+00	1.14E+01	9.51E+01	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.53E-11	4.94E-11	1.32E-11	2.55E-11	2.12E-10	
Zirconium (40)	Zr-89m	8.75E+04	7.92E-06	1.37E+04	2.67E+04	7.13E+03	1.38E+04	1.15E+05	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	2.69E-11	5.27E-11	1.41E-11	2.71E-11	2.26E-10	
Zirconium (40)	Zr-93	4.53E-07	1.53E+06																	
Zirconium (40)	Zr-95	3.95E+00	1.75E-01	8.23E-01	2.35E+00	5.26E-01	4.46E-01	6.98E+00	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.84E-11	1.10E-10	2.46E-11	2.08E-11	3.26E-10	
Zirconium (40)	Zr-97	3.63E+02	1.91E-03	6.03E+01	1.82E+02	4.13E+01	3.19E+01	4.93E+02	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	3.13E-11	9.45E-11	2.15E-11	1.66E-11	2.56E-10	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Actinium (89)	Ac-223	1.73E+05	4.00E-06	0.00E+00	0.00E+00	0.00E+00	7.77E-02	1.87E-02	5.12E-02	7.36E-02	1.89E-02	8.50E-05	
Actinium (89)	Ac-224	2.18E+03	3.17E-04	1.03E-05	5.77E-06	4.59E-04	9.04E-01	2.39E-01	6.43E-01	8.82E-01	2.40E-01	1.09E-03	
Actinium (89)	Ac-225	2.53E+01	2.74E-02	1.94E-04	1.43E-04	3.40E-02	5.29E-02	1.46E-02	3.81E-02	5.14E-02	1.54E-02	6.61E-05	
Actinium (89)	Ac-226	2.07E+02	3.35E-03	5.37E-05	3.85E-05	5.22E-03	5.79E-01	1.43E-01	3.94E-01	5.59E-01	1.60E-01	6.63E-04	
Actinium (89)	Ac-227	3.18E-02	2.18E+01	1.45E-03	1.19E-03	2.19E-01	2.62E-04	9.41E-05	2.04E-04	2.58E-04	2.77E-04	4.26E-07	
Actinium (89)	Ac-228	9.87E+02	7.02E-04	1.90E-06	1.40E-06	5.96E-05	5.04E+00	9.62E-01	2.76E+00	4.35E+00	9.81E-01	4.68E-03	
Actinium (89)	Ac-230	1.79E+05	3.87E-06	0.00E+00	0.00E+00	0.00E+00	3.38E+00	6.13E-01	1.74E+00	2.82E+00	6.91E-01	3.11E-03	
Actinium (89)	Ac-231	4.86E+04	1.43E-05	0.00E+00	0.00E+00	0.00E+00	2.00E+00	4.69E-01	1.30E+00	1.91E+00	5.24E-01	2.15E-03	
Actinium (89)	Ac-232	1.84E+05	3.77E-06	0.00E+00	0.00E+00	0.00E+00	7.29E+00	1.27E+00	3.66E+00	5.96E+00	1.33E+00	6.60E-03	
Actinium (89)	Ac-233	1.51E+05	4.60E-06	0.00E+00	0.00E+00	0.00E+00	2.78E+00	5.85E-01	1.64E+00	2.52E+00	6.71E-01	2.67E-03	
Silver (47)	Ag-100m	1.63E+05	4.26E-06	0.00E+00	0.00E+00	0.00E+00	1.68E+01	3.21E+00	9.15E+00	1.45E+01	3.28E+00	1.55E-02	
Silver (47)	Ag-101	3.28E+04	2.11E-05	1.58E-07	1.20E-07	6.11E-08	8.89E+00	1.78E+00	5.06E+00	7.86E+00	1.84E+00	8.40E-03	
Silver (47)	Ag-102	2.82E+04	2.45E-05	1.98E-07	1.52E-07	8.18E-08	2.04E+01	3.79E+00	1.09E+01	1.74E+01	3.79E+00	1.87E-02	
Silver (47)	Ag-102m	4.73E+04	1.46E-05	0.00E+00	0.00E+00	0.00E+00	1.25E+01	2.15E+00	6.24E+00	1.02E+01	2.12E+00	1.13E-02	
Silver (47)	Ag-103	5.54E+03	1.25E-04	1.84E-07	1.41E-07	1.14E-07	4.63E+00	9.30E-01	2.65E+00	4.09E+00	9.41E-01	4.43E-03	
Silver (47)	Ag-104	5.26E+03	1.32E-04	2.82E-07	2.27E-07	1.69E-07	1.58E+01	3.01E+00	8.65E+00	1.37E+01	2.97E+00	1.45E-02	
Silver (47)	Ag-104m	1.09E+04	6.37E-05	3.23E-07	2.46E-07	1.33E-07	1.06E+01	2.02E+00	5.75E+00	9.13E+00	2.03E+00	9.87E-03	
Silver (47)	Ag-105	6.13E+00	1.13E-01	2.19E-06	1.71E-06	3.44E-06	2.65E+00	5.60E-01	1.59E+00	2.41E+00	5.59E-01	2.58E-03	
Silver (47)	Ag-105m	5.04E+04	1.38E-05	0.00E+00	0.00E+00	0.00E+00	5.27E-03	1.12E-03	3.18E-03	4.84E-03	1.12E-03	5.16E-06	
Silver (47)	Ag-106	1.52E+04	4.56E-05	1.56E-07	1.17E-07	6.73E-08	3.83E+00	7.98E-01	2.26E+00	3.47E+00	8.51E-01	3.65E-03	
Silver (47)	Ag-106m	3.05E+01	2.27E-02	6.77E-06	5.44E-06	4.81E-06	1.63E+01	3.12E+00	8.97E+00	1.42E+01	3.07E+00	1.51E-02	
Silver (47)	Ag-108	1.54E+05	4.51E-06	0.00E+00	0.00E+00	0.00E+00	1.18E-01	3.04E-02	7.23E-02	1.07E-01	1.05E-01	1.48E-04	
Silver (47)	Ag-108m	1.66E+03	4.18E+02	1.09E-05	8.70E-06	1.49E-04	8.99E+00	1.82E+00	5.19E+00	8.05E+00	1.80E+00	8.44E-03	
Silver (47)	Ag-109m	5.52E+05	1.26E-06	0.00E+00	0.00E+00	0.00E+00	1.02E-02	4.13E-03	8.56E-03	1.02E-02	8.66E-03	1.84E-05	
Silver (47)	Ag-110	8.88E+05	7.80E-07	0.00E+00	0.00E+00	0.00E+00	2.37E-01	7.01E-02	1.49E-01	2.15E-01	1.91E-01	2.87E-04	
Silver (47)	Ag-110m	1.01E+00	6.84E-01	1.31E-05	1.04E-05	5.11E-05	1.63E+01	3.08E+00	8.87E+00	1.41E+01	3.03E+00	1.49E-02	
Silver (47)	Ag-111	3.40E+01	2.04E-02	6.40E-06	4.63E-06	7.18E-06	1.40E-01	3.21E-02	8.84E-02	1.32E-01	6.18E-02	1.62E-04	
Silver (47)	Ag-111m	3.37E+05	2.05E-06	0.00E+00	0.00E+00	0.00E+00	1.74E-02	4.32E-03	1.11E-02	1.62E-02	6.77E-03	1.96E-05	
Silver (47)	Ag-112	1.94E+03	3.57E-04	2.12E-06	1.56E-06	7.77E-07	4.26E+00	8.07E-01	2.26E+00	3.61E+00	9.02E-01	3.96E-03	
Silver (47)	Ag-113	1.13E+03	6.13E-04	2.00E-06	1.45E-06	7.29E-07	4.13E-01	9.64E-02	2.52E-01	3.77E-01	1.86E-01	4.47E-04	
Silver (47)	Ag-113m	3.18E+05	2.18E-06	0.00E+00	0.00E+00	0.00E+00	1.13E+00	2.43E-01	6.86E-01	1.04E+00	2.61E-01	1.12E-03	
Silver (47)	Ag-114	4.75E+06	1.46E-07	0.00E+00	0.00E+00	0.00E+00	1.74E+00	3.74E-01	9.62E-01	1.49E+00	5.04E-01	1.70E-03	
Silver (47)	Ag-115	1.82E+04	3.81E-05	3.07E-07	2.28E-07	1.25E-07	2.99E+00	5.57E-01	1.57E+00	2.50E+00	6.48E-01	2.80E-03	
Silver (47)	Ag-116	1.36E+05	5.10E-06	0.00E+00	0.00E+00	0.00E+00	1.37E+01	2.37E+00	6.82E+00	1.11E+01	2.42E+00	1.25E-02	
Silver (47)	Ag-117	2.97E+05	2.33E-06	0.00E+00	0.00E+00	0.00E+00	8.29E+00	1.43E+00	4.11E+00	6.71E+00	1.50E+00	7.59E-03	
Silver (47)	Ag-99	1.76E+05	3.93E-06	0.00E+00	0.00E+00	0.00E+00	1.35E+01	2.60E+00	7.43E+00	1.17E+01	2.67E+00	1.26E-02	
Aluminum (13)	Al-26	9.67E-07	7.17E+05	1.70E-05	1.29E-05	4.22E-04	1.65E+01	2.91E+00	8.46E+00	1.37E+01	2.89E+00	1.49E-02	
Aluminum (13)	Al-28	1.63E+05	4.26E-06	0.00E+00	0.00E+00	0.00E+00	1.16E+01	1.94E+00	5.62E+00	9.30E+00	2.00E+00	1.04E-02	
Aluminum (13)	Al-29	5.55E+04	1.25E-05	0.00E+00	0.00E+00	0.00E+00	8.65E+00	1.53E+00	4.41E+00	7.15E+00	1.60E+00	7.83E-03	
Americium (95)	Am-237	4.99E+03	1.39E-04	8.81E-08	6.77E-08	1.13E-07	1.71E+00	3.96E-01	1.10E+00	1.61E+00	3.95E-01	1.81E-03	
Americium (95)	Am-238	3.72E+03	1.86E-04	1.50E-07	1.19E-07	2.22E-07	5.08E+00	1.19E-01	2.82E+00	4.41E+00	9.75E-01	4.78E-03	
Americium (95)	Am-239	5.10E+02	1.36E-03	1.23E-06	9.07E-07	1.02E-06	8.93E-01	2.41E-01	6.41E-01	8.72E-01	2.44E-01	1.09E-03	
Americium (95)	Am-240	1.20E+02	5.80E-03	2.82E-06	2.19E-06	1.89E-06	5.87E+00	1.13E+00	3.23E+00	5.10E+00	1.12E+00	5.48E-03	
Americium (95)	Am-241	1.60E-03	4.32E+02	8.81E-04	7.55E-04	3.63E-01	3.72E-02	1.83E-02	3.46E-02	3.72E-02	2.55E-02	7.85E-05	
Americium (95)	Am-242	3.79E+02	1.83E-03	1.56E-06	1.11E-06	7.99E-05	4.50E-02	1.40E-02	3.51E-02	4.48E-02	1.88E-02	7.13E-05	
Americium (95)	Am-242m	4.91E-03	1.41E+02	7.99E-04	7.03E-04	3.43E-01	1.06E-03	5.14E-04	8.82E-04	1.05E-03	2.42E-03	2.31E-06	
Americium (95)	Am-243	9.40E-05	7.37E+03	8.73E-04	7.51E-04	3.61E-01	1.29E-01	5.08E-02	1.12E-01	1.29E-01	5.80E-02	2.24E-04	
Americium (95)	Am-244	6.01E+02	1.15E-03	2.27E-06	1.69E-06	4.88E-06	4.48E+00	8.82E-01	2.52E+00	3.94E+00	8.83E-01	4.18E-03	
Americium (95)	Am-244m	1.40E+04	4.95E-05	1.48E-07	1.10E-07	2.35E-07	9.49E-02	2.26E-02	5.49E-02	8.31E-02	8.19E-02	1.21E-04	
Americium (95)	Am-245	2.96E+03	2.34E-04	3.13E-07	2.31E-07	2.39E-07	1.33E-01	3.42E-02	9.21E-02	1.29E-01	4.79E-02	1.69E-04	
Americium (95)	Am-246	9.34E+03	7.42E-05	3.15E-07	2.36E-07	3.27E-07	3.94E+00	8.14E-01	2.30E+00	3.55E+00	8.51E-01	3.82E-03	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Americium (95)	Am-246m	1.46E+04	4.76E-05	1.69E-07	1.28E-07	1.02E-07	5.79E+00	1.09E+00	3.14E+00	4.99E+00	1.12E+00	5.34E-03	
Americium (95)	Am-247	1.58E+04	4.38E-05	1.51E-07	1.12E-07	1.17E-07	5.79E-01	1.46E-01	3.94E-01	5.57E-01	1.98E-01	6.83E-04	
Argon (18)	Ar-37	7.22E+00	9.60E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Argon (18)	Ar-39	2.58E-03	2.69E+02	0.00E+00	0.00E+00	0.00E+00	8.05E-04	2.95E-04	6.31E-04	7.94E-04	2.95E-03	1.34E-05	
Argon (18)	Ar-41	3.32E+03	2.09E-04	0.00E+00	0.00E+00	0.00E+00	7.94E+00	1.41E+00	4.09E+00	6.63E+00	1.43E+00	7.18E-03	
Argon (18)	Ar-42	2.11E-02	3.29E+01	0.00E+00	0.00E+00	0.00E+00	9.68E-04	3.70E-04	7.60E-04	9.53E-04	4.77E-03	1.47E-05	
Argon (18)	Ar-43	6.78E+04	1.02E-05	0.00E+00	0.00E+00	0.00E+00	9.69E+00	1.71E+00	4.91E+00	7.98E+00	1.78E+00	8.82E-03	
Argon (18)	Ar-44	3.07E+04	2.26E-05	0.00E+00	0.00E+00	0.00E+00	1.22E+01	2.09E+00	6.09E+00	9.96E+00	2.08E+00	1.10E-02	
Arsenic (33)	As-68	1.44E+05	4.81E-06	0.00E+00	0.00E+00	0.00E+00	2.24E+01	4.18E+00	1.20E+01	1.91E+01	4.22E+00	2.06E-02	
Arsenic (33)	As-69	2.39E+04	2.90E-05	2.69E-07	2.02E-07	9.51E-08	6.41E+00	1.33E+00	3.74E+00	5.75E+00	1.43E+00	6.13E-03	
Arsenic (33)	As-70	6.92E+03	1.00E-04	6.51E-07	5.07E-07	3.20E-07	2.54E+01	4.73E+00	1.36E+01	2.17E+01	4.72E+00	2.34E-02	
Arsenic (33)	As-71	9.30E+01	7.45E-03	2.17E-06	1.69E-06	1.62E-06	3.03E+00	6.43E-01	1.82E+00	2.76E+00	6.36E-01	2.98E-03	
Arsenic (33)	As-72	2.33E+02	2.97E-03	8.95E-06	6.85E-06	4.22E-06	1.02E+01	2.04E+00	5.77E+00	9.04E+00	2.10E+00	9.59E-03	
Arsenic (33)	As-73	3.15E+00	2.20E-01	1.30E-06	9.58E-07	5.62E-06	7.81E-03	4.30E-03	7.49E-03	7.81E-03	6.01E-03	1.80E-05	
Arsenic (33)	As-74	1.42E+01	4.87E-02	6.22E-06	4.74E-06	1.03E-05	4.22E+00	8.59E-01	2.45E+00	3.79E+00	8.72E-01	3.97E-03	
Arsenic (33)	As-76	2.35E+02	2.95E-03	7.81E-06	5.88E-06	3.37E-06	2.45E+00	4.99E-01	1.38E+00	2.17E+00	6.00E-01	2.34E-03	
Arsenic (33)	As-77	1.56E+02	4.43E-03	1.95E-06	1.46E-06	1.79E-06	4.30E-02	9.73E-03	2.73E-02	4.02E-02	1.55E-02	5.67E-05	
Arsenic (33)	As-78	4.02E+03	1.73E-04	9.66E-07	7.29E-07	4.00E-07	7.96E+00	1.48E+00	4.22E+00	6.76E+00	1.55E+00	7.32E-03	
Arsenic (33)	As-79	4.04E+04	1.71E-05	0.00E+00	0.00E+00	0.00E+00	2.22E-01	5.87E-02	1.37E-01	2.02E-01	1.61E-01	2.63E-04	
Astatine (85)	At-204	3.96E+04	1.75E-05	0.00E+00	0.00E+00	0.00E+00	1.28E+01	2.63E+00	7.47E+00	1.15E+01	2.63E+00	1.21E-02	
Astatine (85)	At-205	1.39E+04	4.98E-05	2.90E-07	2.21E-07	2.90E-06	6.46E+00	1.27E+00	3.61E+00	5.62E+00	1.27E+00	6.10E-03	
Astatine (85)	At-206	1.19E+04	5.82E-05	3.22E-07	2.48E-07	9.69E-07	1.39E+01	2.78E+00	7.92E+00	1.23E+01	2.76E+00	1.31E-02	
Astatine (85)	At-207	3.37E+03	2.05E-04	1.12E-06	8.40E-07	8.92E-06	1.18E+01	2.20E+00	6.33E+00	1.00E+01	2.16E+00	1.09E-02	
Astatine (85)	At-208	3.72E+03	1.86E-04	4.37E-07	3.43E-07	2.43E-06	1.75E+01	3.36E+00	9.64E+00	1.52E+01	3.31E+00	1.63E-02	
Astatine (85)	At-209	1.12E+03	6.18E-04	1.86E-06	1.41E-06	1.12E-05	1.28E+01	2.54E+00	7.23E+00	1.13E+01	2.51E+00	1.20E-02	
Astatine (85)	At-210	7.49E+02	9.25E-04	4.33E-06	3.25E-06	4.33E-05	1.78E+01	3.23E+00	9.32E+00	1.50E+01	3.16E+00	1.63E-02	
Astatine (85)	At-211	8.42E+02	8.24E-04	5.48E-05	4.03E-05	4.81E-04	9.60E-02	3.33E-02	7.81E-02	9.49E-02	3.58E-02	1.48E-04	
Astatine (85)	At-215	2.19E+11	3.17E-12	0.00E+00	0.00E+00	0.00E+00	8.95E-04	1.92E-04	5.47E-04	8.26E-04	1.91E-04	8.79E-07	
Astatine (85)	At-216	7.28E+10	9.51E-12	0.00E+00	0.00E+00	0.00E+00	8.31E-03	2.47E-03	6.20E-03	8.11E-03	2.56E-03	1.11E-05	
Astatine (85)	At-217	6.77E+08	1.02E-09	0.00E+00	0.00E+00	0.00E+00	1.19E-03	2.69E-04	7.51E-04	1.11E-03	2.65E-04	1.24E-06	
Astatine (85)	At-218	1.46E+07	4.76E-08	0.00E+00	0.00E+00	0.00E+00	5.57E-05	3.16E-05	4.43E-05	5.34E-05	1.46E-04	1.14E-07	
Astatine (85)	At-219	3.90E+05	1.78E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Astatine (85)	At-220	9.82E+04	7.06E-06	0.00E+00	0.00E+00	0.00E+00	2.37E+00	5.40E-01	1.48E+00	2.20E+00	6.41E-01	2.44E-03	
Gold (79)	Au-186	3.40E+04	2.04E-05	2.19E-07	1.66E-07	8.99E-08	8.37E+00	1.70E+00	4.80E+00	7.42E+00	1.75E+00	8.02E-03	
Gold (79)	Au-187	4.34E+04	1.60E-05	0.00E+00	0.00E+00	0.00E+00	6.22E+00	1.15E+00	3.29E+00	5.25E+00	1.14E+00	5.79E-03	
Gold (79)	Au-190	8.51E+03	8.14E-05	2.00E-07	1.58E-07	1.07E-07	1.47E+01	2.54E+00	7.36E+00	1.20E+01	2.47E+00	1.35E-02	
Gold (79)	Au-191	1.91E+03	3.63E-04	3.50E-07	2.70E-07	2.80E-07	2.95E+00	6.48E-01	1.80E+00	2.69E+00	6.48E-01	2.98E-03	
Gold (79)	Au-192	1.23E+03	5.64E-04	8.10E-07	6.44E-07	4.26E-07	1.18E+01	2.07E+00	6.01E+00	9.73E+00	2.02E+00	1.08E-02	
Gold (79)	Au-193	3.44E+02	2.01E-03	6.33E-07	4.77E-07	4.55E-07	5.98E-01	1.66E-01	4.22E-01	5.73E-01	1.74E-01	7.48E-04	
Gold (79)	Au-193m	5.60E+06	1.24E-07	0.00E+00	0.00E+00	0.00E+00	9.13E-01	2.15E-01	6.00E-01	8.72E-01	2.10E-01	9.77E-04	
Gold (79)	Au-194	1.60E+02	4.34E-03	1.91E-06	1.51E-06	1.03E-06	5.98E+00	1.13E+00	3.21E+00	5.10E+00	1.10E+00	5.62E-03	
Gold (79)	Au-195	1.36E+00	5.10E-01	1.31E-06	9.81E-07	7.40E-06	1.79E-01	7.15E-02	1.56E-01	1.79E-01	8.10E-02	3.15E-04	
Gold (79)	Au-195m	7.17E+05	9.67E-07	0.00E+00	0.00E+00	0.00E+00	9.32E-01	2.19E-01	6.09E-01	8.87E-01	2.15E-01	9.95E-04	
Gold (79)	Au-196	4.09E+01	1.69E-02	1.68E-06	1.31E-06	1.39E-06	2.30E+00	5.21E-01	1.45E+00	5.15E+00	5.18E-01	2.36E-03	
Gold (79)	Au-196m	6.32E+02	1.10E-03	1.95E-06	1.44E-06	1.85E-06	9.10E-01	2.48E-01	6.52E-01	8.87E-01	2.53E-01	1.13E-03	
Gold (79)	Au-198	9.39E+01	7.38E-03	5.14E-06	3.81E-06	3.64E-06	2.15E+00	4.58E-01	1.30E+00	1.98E+00	4.73E-01	2.10E-03	
Gold (79)	Au-198m	1.11E+02	6.22E-03	5.96E-06	4.48E-06	7.59E-06	2.22E+00	5.66E-01	1.54E+00	2.15E+00	5.63E-01	2.58E-03	
Gold (79)	Au-199	8.06E+01	8.60E-03	2.25E-06	1.66E-06	3.33E-06	3.83E-01	1.01E-01	2.73E-01	3.75E-01	1.01E-01	4.64E-04	
Gold (79)	Au-200	7.53E+03	9.21E-05	3.36E-07	2.49E-07	1.53E-07	1.64E+00	3.19E-01	8.95E-01	1.41E+00	3.94E-01	1.55E-03	
Gold (79)	Au-200m	3.25E+02	2.13E-03	4.88E-06	3.74E-06	2.94E-06	1.07E+01	2.22E+00	6.35E+00	9.73E+00	2.20E+00	1.03E-02	
Gold (79)	Au-201	1.40E+04	4.95E-05	1.21E-07	8.99E-08	7.51E-08	1.89E-01	4.22E-02	1.14E-01	1.72E-01	8.55E-02	2.09E-04	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Gold (79)	Au-202	7.59E+05	9.13E-07	0.00E+00	0.00E+00	0.00E+00	1.06E+00	2.22E-01	5.94E-01	9.23E-01	3.28E-01	1.04E-03	
Barium (56)	Ba-124	3.31E+04	2.09E-05	3.42E-07	2.56E-07	1.00E-07	3.06E+00	6.24E-01	1.77E+00	2.73E+00	6.46E-01	2.93E-03	
Barium (56)	Ba-126	3.64E+03	1.90E-04	1.24E-06	9.40E-07	4.92E-07	3.14E+00	6.28E-01	1.79E+00	2.78E+00	6.31E-01	2.99E-03	
Barium (56)	Ba-127	2.87E+04	2.42E-05	1.21E-07	9.18E-08	4.96E-08	4.00E+00	8.20E-01	2.32E+00	3.57E+00	8.81E-01	3.83E-03	
Barium (56)	Ba-128	1.04E+02	6.66E-03	1.32E-05	1.01E-05	6.11E-06	2.19E-01	5.53E-02	1.43E-01	2.07E-01	6.85E-02	2.48E-04	
Barium (56)	Ba-129	2.72E+03	2.55E-04	2.32E-07	1.80E-07	1.27E-07	1.74E+00	3.57E-01	1.01E+00	1.55E+00	3.78E-01	1.68E-03	
Barium (56)	Ba-129m	2.81E+03	2.47E-04	3.26E-07	2.66E-07	2.06E-07	9.00E+00	1.74E+00	4.97E+00	7.83E+00	1.72E+00	8.41E-03	
Barium (56)	Ba-131	2.20E+01	3.15E-02	2.25E-06	1.71E-06	3.52E-06	2.34E+00	5.10E-01	1.43E+00	2.15E+00	5.20E-01	2.34E-03	
Barium (56)	Ba-131m	2.49E+04	2.78E-05	2.46E-08	1.85E-08	3.31E-08	2.17E-01	6.91E-02	1.69E-01	2.17E-01	7.87E-02	3.09E-04	
Barium (56)	Ba-133	6.59E-02	1.05E+01	9.03E-06	5.70E-06	4.14E-05	1.82E+00	4.18E-01	1.15E+00	1.71E+00	4.36E-01	1.89E-03	
Barium (56)	Ba-133m	1.56E+02	4.44E-03	2.66E-06	2.04E-06	2.01E-06	2.54E-01	6.18E-02	1.65E-01	2.41E-01	7.11E-02	2.91E-04	
Barium (56)	Ba-135m	2.12E+02	3.28E-03	2.09E-06	1.61E-06	1.54E-06	2.17E-01	5.36E-02	1.42E-01	2.05E-01	6.29E-02	2.52E-04	
Barium (56)	Ba-137m	1.43E+05	4.86E-06	0.00E+00	0.00E+00	0.00E+00	3.38E+00	6.72E-01	1.92E+00	3.01E+00	6.75E-01	3.14E-03	
Barium (56)	Ba-139	4.39E+03	1.58E-04	6.07E-07	4.51E-07	2.59E-07	2.35E-01	7.01E-02	1.64E-01	2.26E-01	1.74E-01	3.12E-04	
Barium (56)	Ba-140	1.98E+01	3.49E-02	1.34E-05	9.69E-06	2.41E-05	9.58E-01	2.04E-01	5.72E-01	8.74E-01	2.23E-01	9.41E-04	
Barium (56)	Ba-141	1.99E+04	3.48E-05	3.64E-07	2.74E-07	1.54E-07	5.27E+00	1.05E+00	2.97E+00	4.63E+00	1.13E+00	5.04E-03	
Barium (56)	Ba-142	3.44E+04	2.02E-05	1.65E-07	1.26E-07	9.36E-08	6.05E+00	1.16E+00	3.33E+00	5.25E+00	1.18E+00	5.65E-03	
Beryllium (4)	Be-10	4.59E-07	1.51E+06	5.77E-06	4.22E-06	1.35E-04	1.01E-03	3.70E-04	7.94E-04	9.99E-04	4.02E-03	1.62E-05	
Beryllium (4)	Be-7	4.75E+00	1.46E-01	1.29E-07	1.04E-07	2.37E-07	2.71E-01	5.66E-02	1.61E-01	2.47E-01	5.56E-02	2.58E-04	
Bismuth (83)	Bi-197	3.92E+04	1.77E-05	0.00E+00	0.00E+00	0.00E+00	9.88E+00	1.89E+00	5.36E+00	8.50E+00	1.87E+00	9.17E-03	
Bismuth (83)	Bi-200	1.00E+04	6.93E-05	2.65E-07	2.08E-07	1.62E-07	1.35E+01	2.73E+00	7.73E+00	1.20E+01	2.70E+00	1.28E-02	
Bismuth (83)	Bi-201	3.37E+03	2.05E-04	5.51E-07	4.33E-07	3.32E-07	1.03E+01	1.89E+00	5.42E+00	8.69E+00	1.85E+00	9.47E-03	
Bismuth (83)	Bi-202	3.53E+03	1.96E-04	4.66E-07	3.74E-07	2.79E-07	1.58E+01	3.06E+00	8.76E+00	1.38E+01	3.02E+00	1.47E-02	
Bismuth (83)	Bi-203	5.16E+02	1.34E-03	2.32E-06	1.84E-06	1.27E-06	1.44E+01	2.60E+00	7.49E+00	1.20E+01	2.54E+00	1.32E-02	
Bismuth (83)	Bi-204	5.41E+02	1.28E-03	2.67E-06	2.13E-06	1.41E-06	1.70E+01	3.23E+00	9.25E+00	1.46E+01	3.17E+00	1.58E-02	
Bismuth (83)	Bi-205	1.65E+01	4.19E-02	4.26E-06	3.39E-06	4.55E-06	1.02E+01	1.84E+00	5.29E+00	8.52E+00	1.79E+00	9.33E-03	
Bismuth (83)	Bi-206	4.05E+01	1.71E-02	9.14E-06	7.22E-06	7.96E-06	1.91E+01	3.62E+00	1.04E+01	1.64E+01	3.57E+00	1.76E-02	
Bismuth (83)	Bi-207	2.11E-02	3.29E+01	6.11E-06	4.74E-06	1.51E-04	8.82E+00	1.70E+00	4.86E+00	7.66E+00	1.70E+00	8.21E-03	
Bismuth (83)	Bi-208	1.88E-06	3.68E+05	5.33E-06	4.29E-06	1.42E-04	1.77E+01	2.73E+00	8.01E+00	1.36E+01	2.58E+00	1.58E-02	
Bismuth (83)	Bi-210	5.05E+01	1.37E-02	6.66E-06	4.85E-06	5.40E-04	5.47E-03	3.14E-03	4.54E-03	5.36E-03	4.10E-02	3.01E-05	
Bismuth (83)	Bi-210m	2.28E-07	3.04E+06	7.44E-05	5.55E-05	3.96E-02	1.30E+00	2.91E-01	8.22E-01	1.22E+00	2.85E-01	1.33E-03	
Bismuth (83)	Bi-211	1.70E+05	4.07E-06	0.00E+00	0.00E+00	0.00E+00	2.41E-01	5.31E-02	1.50E-01	2.24E-01	5.20E-02	2.42E-04	
Bismuth (83)	Bi-212	6.02E+03	1.15E-04	1.30E-06	9.66E-07	6.11E-05	6.26E-01	1.25E-01	3.44E-01	5.40E-01	1.80E-01	6.04E-04	
Bismuth (83)	Bi-212n	5.20E+04	1.33E-05	0.00E+00	0.00E+00	0.00E+00	1.22E-02	7.36E-03	1.01E-02	1.19E-02	7.05E-02	4.54E-05	
Bismuth (83)	Bi-213	7.99E+03	8.67E-05	9.92E-07	7.33E-07	1.31E-04	6.87E-01	1.49E-01	4.15E-01	6.30E-01	1.92E-01	6.94E-04	
Bismuth (83)	Bi-214	1.83E+04	3.79E-05	5.51E-07	4.14E-07	3.66E-05	9.13E+00	1.63E+00	4.71E+00	7.62E+00	1.66E+00	8.30E-03	
Bismuth (83)	Bi-215	4.79E+04	1.45E-05	0.00E+00	0.00E+00	0.00E+00	1.37E+00	2.91E-01	8.11E-01	1.23E+00	3.59E-01	1.38E-03	
Bismuth (83)	Bi-216	1.68E+05	4.13E-06	0.00E+00	0.00E+00	0.00E+00	4.13E+00	8.80E-01	2.45E+00	3.74E+00	9.89E-01	3.98E-03	
Berkelium (97)	Bk-245	5.12E+01	1.35E-02	2.90E-06	2.14E-06	9.18E-06	9.04E-01	2.37E-01	6.41E-01	8.80E-01	2.41E-01	1.08E-03	
Berkelium (97)	Bk-246	1.41E+02	4.93E-03	2.15E-06	1.67E-06	1.24E-06	4.74E+00	9.34E-01	2.65E+00	4.15E+00	9.27E-01	4.46E-03	
Berkelium (97)	Bk-247	5.02E-04	1.38E+03	1.64E-03	1.30E-03	6.55E-01	5.92E-01	1.54E-01	4.13E-01	5.72E-01	1.54E-01	6.99E-04	
Berkelium (97)	Bk-248m	2.56E+02	2.71E-03	2.24E-06	1.58E-06	6.48E-05	2.35E-01	5.64E-02	1.53E-01	2.20E-01	6.72E-02	2.66E-04	
Berkelium (97)	Bk-249	7.67E-01	9.04E-01	4.63E-06	3.67E-06	1.63E-03	6.35E-06	2.84E-06	5.10E-06	6.16E-06	6.63E-06	5.10E-08	
Berkelium (97)	Bk-250	1.89E+03	3.67E-04	6.77E-07	5.11E-07	1.94E-06	5.32E+00	9.98E-01	2.88E+00	4.58E+00	9.96E-01	4.88E-03	
Berkelium (97)	Bk-251	6.55E+03	1.06E-04	1.89E-07	1.40E-07	1.75E-07	3.10E-01	8.80E-02	2.30E-01	3.06E-01	1.10E-01	4.16E-04	
Bromine (35)	Br-72	2.78E+05	2.49E-06	0.00E+00	0.00E+00	0.00E+00	1.77E+01	3.42E+00	9.69E+00	1.53E+01	3.50E+00	1.65E-02	
Bromine (35)	Br-73	1.07E+05	6.47E-06	0.00E+00	0.00E+00	0.00E+00	7.94E+00	1.66E+00	4.65E+00	7.15E+00	1.77E+00	7.61E-03	
Bromine (35)	Br-74	1.43E+04	4.83E-05	3.96E-07	3.03E-07	1.76E-07	2.95E+01	4.89E+00	1.42E+01	2.35E+01	4.79E+00	2.69E-02	
Bromine (35)	Br-74m	7.92E+03	8.75E-05	6.51E-07	5.00E-07	2.98E-07	2.54E+01	4.54E+00	1.31E+01	2.11E+01	4.50E+00	2.34E-02	
Bromine (35)	Br-75	3.77E+03	1.84E-04	3.81E-07	2.90E-07	2.45E-07	6.48E+00	1.36E+00	3.87E+00	5.92E+00	1.40E+00	6.26E-03	
Bromine (35)	Br-76	3.75E+02	1.85E-03	2.19E-06	1.71E-06	1.88E-06	1.71E+01	3.04E+00	8.82E+00	1.43E+01	3.02E+00	1.56E-02	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Bromine (35)	Br-76m	1.67E+07	4.15E-08	0.00E+00	0.00E+00	0.00E+00	6.93E-02	2.63E-02	5.21E-02	6.52E-02	3.78E-02	1.13E-04	
Bromine (35)	Br-77	1.06E+02	6.51E-03	4.44E-07	3.62E-07	3.96E-07	1.69E+00	3.55E-01	1.01E+00	1.54E+00	3.50E-01	1.63E-03	
Bromine (35)	Br-77m	8.51E+04	8.14E-06	0.00E+00	0.00E+00	0.00E+00	4.99E-02	1.52E-02	3.89E-02	4.97E-02	1.60E-02	6.96E-05	
Bromine (35)	Br-78	5.64E+04	1.23E-05	0.00E+00	0.00E+00	0.00E+00	5.73E+00	1.20E+00	3.38E+00	5.19E+00	1.30E+00	5.48E-03	
Bromine (35)	Br-80	2.06E+04	3.36E-05	1.55E-07	1.15E-07	6.40E-08	4.48E-01	1.01E-01	2.65E-01	4.05E-01	1.87E-01	4.65E-04	
Bromine (35)	Br-80m	1.37E+03	5.05E-04	5.74E-07	4.26E-07	4.63E-07	8.95E-03	6.91E-03	8.91E-03	8.95E-03	1.61E-02	2.78E-05	
Bromine (35)	Br-82	1.72E+02	4.03E-03	2.50E-06	2.03E-06	2.86E-06	1.54E+01	2.95E+00	8.48E+00	1.34E+01	2.90E+00	1.42E-02	
Bromine (35)	Br-82m	5.94E+04	1.17E-05	0.00E+00	0.00E+00	0.00E+00	1.79E-02	4.15E-03	1.03E-02	1.57E-02	7.80E-03	1.86E-05	
Bromine (35)	Br-83	2.53E+03	2.74E-04	2.21E-07	1.64E-07	2.23E-07	4.11E-02	9.45E-03	2.48E-02	3.74E-02	3.37E-02	5.95E-05	
Bromine (35)	Br-84	1.15E+04	6.05E-05	4.37E-07	3.27E-07	1.71E-07	1.15E+01	1.91E+00	5.51E+00	9.12E+00	1.93E+00	1.04E-02	
Bromine (35)	Br-84m	6.07E+04	1.14E-05	0.00E+00	0.00E+00	0.00E+00	1.67E+01	3.08E+00	8.87E+00	1.42E+01	3.11E+00	1.53E-02	
Bromine (35)	Br-85	1.26E+05	5.52E-06	0.00E+00	0.00E+00	0.00E+00	4.43E-01	1.02E-01	2.50E-01	3.85E-01	2.14E-01	4.65E-04	
Carbon (6)	C-10	1.14E+06	6.11E-07	0.00E+00	0.00E+00	0.00E+00	9.79E+00	2.00E+00	5.66E+00	8.78E+00	2.06E+00	9.22E-03	
Carbon (6)	C-11	1.79E+04	3.88E-05	1.15E-07	8.73E-08	8.07E-08	5.60E+00	1.16E+00	3.31E+00	5.08E+00	1.17E+00	5.32E-03	
Carbon (6)	C-14	1.22E-04	5.70E+03	2.34E-06	2.15E-06	2.28E-05	1.11E-05	6.48E-06	1.03E-05	1.11E-05	1.50E-05	3.04E-07	
Calcium (20)	Ca-41	6.79E-06	1.02E+05	1.10E-06	8.40E-07	8.51E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Calcium (20)	Ca-45	1.55E+00	4.46E-01	3.85E-06	2.62E-06	1.48E-05	5.34E-05	2.48E-05	4.69E-05	5.34E-05	4.42E-05	1.77E-06	
Calcium (20)	Ca-47	5.58E+01	1.24E-02	7.59E-06	5.92E-06	8.81E-06	6.46E+00	1.16E+00	3.36E+00	5.42E+00	1.16E+00	5.86E-03	
Calcium (20)	Ca-49	4.18E+04	1.66E-05	0.00E+00	0.00E+00	0.00E+00	2.17E+01	3.21E+00	9.49E+00	1.63E+01	3.12E+00	1.95E-02	
Cadmium (48)	Cd-101	2.68E+05	2.59E-06	0.00E+00	0.00E+00	0.00E+00	1.48E+01	2.75E+00	7.90E+00	1.26E+01	2.79E+00	1.37E-02	
Cadmium (48)	Cd-102	6.62E+04	1.05E-05	0.00E+00	0.00E+00	0.00E+00	4.61E+00	9.27E-01	2.63E+00	4.11E+00	9.25E-01	4.36E-03	
Cadmium (48)	Cd-103	4.99E+04	1.39E-05	0.00E+00	0.00E+00	0.00E+00	1.29E+01	2.26E+00	6.56E+00	1.06E+01	2.23E+00	1.17E-02	
Cadmium (48)	Cd-104	6.31E+03	1.10E-04	4.96E-07	3.74E-07	2.17E-07	1.18E+00	2.56E-01	7.04E-01	1.06E+00	2.68E-01	1.18E-03	
Cadmium (48)	Cd-105	6.56E+03	1.06E-04	2.02E-07	1.57E-07	1.06E-07	7.85E+00	1.41E+00	4.09E+00	6.59E+00	1.40E+00	7.16E-03	
Cadmium (48)	Cd-107	9.34E+02	7.42E-04	3.18E-07	2.31E-07	3.38E-07	4.24E-02	1.27E-02	2.88E-02	3.96E-02	2.67E-02	5.72E-05	
Cadmium (48)	Cd-109	5.48E-01	1.26E+00	9.32E-06	7.40E-06	2.55E-05	1.22E-02	6.07E-03	1.05E-02	1.22E-02	1.93E-02	2.65E-05	
Cadmium (48)	Cd-111m	7.51E+03	9.23E-05	6.70E-08	5.11E-08	9.84E-08	1.31E+00	3.06E-01	8.65E-01	1.26E+00	3.04E-01	1.40E-03	
Cadmium (48)	Cd-113	9.00E-17	7.70E+15	9.73E-05	9.07E-05	4.59E-04	9.64E-05	4.11E-05	8.18E-05	9.60E-05	6.71E-05	2.91E-06	
Cadmium (48)	Cd-113m	4.91E-02	1.41E+01	9.51E-05	8.66E-05	4.33E-04	8.99E-04	2.91E-04	6.65E-04	8.74E-04	2.08E-03	1.08E-05	
Cadmium (48)	Cd-115	1.14E+02	6.10E-03	7.03E-06	5.14E-06	4.63E-06	1.05E+00	2.20E-01	6.22E-01	9.56E-01	2.42E-01	1.02E-03	
Cadmium (48)	Cd-115m	5.67E+00	1.22E-01	1.61E-05	1.22E-05	3.15E-05	2.13E-01	4.61E-02	1.19E-01	1.84E-01	1.19E-01	2.32E-04	
Cadmium (48)	Cd-117	2.44E+03	2.84E-04	1.38E-06	1.03E-06	7.47E-07	6.48E+00	1.19E+00	3.44E+00	5.49E+00	1.20E+00	5.97E-03	
Cadmium (48)	Cd-117m	1.81E+03	3.84E-04	1.37E-06	1.05E-06	9.03E-07	1.28E+01	2.22E+00	6.44E+00	1.05E+01	2.15E+00	1.15E-02	
Cadmium (48)	Cd-118	7.24E+03	9.57E-05	9.25E-07	6.81E-07	3.55E-07	4.17E-04	1.52E-04	3.31E-04	4.11E-04	6.78E-04	8.47E-06	
Cadmium (48)	Cd-119	1.35E+05	5.12E-06	0.00E+00	0.00E+00	0.00E+00	1.02E+01	1.79E+00	5.17E+00	8.42E+00	1.82E+00	9.29E-03	
Cadmium (48)	Cd-119m	1.66E+05	4.19E-06	0.00E+00	0.00E+00	0.00E+00	1.44E+01	2.50E+00	7.29E+00	1.19E+01	2.51E+00	1.30E-02	
Cerium (58)	Ce-130	1.59E+04	4.36E-05	3.47E-07	2.64E-07	1.58E-07	2.52E+00	5.31E-01	1.49E+00	2.26E+00	5.44E-01	2.50E-03	
Cerium (58)	Ce-131	3.57E+04	1.94E-05	1.34E-07	1.02E-07	6.22E-08	9.23E+00	1.81E+00	5.17E+00	8.09E+00	1.85E+00	8.68E-03	
Cerium (58)	Ce-132	1.73E+03	4.01E-04	1.64E-06	1.23E-06	6.36E-07	1.15E+00	2.80E-01	7.68E-01	1.11E+00	2.91E-01	1.27E-03	
Cerium (58)	Ce-133	3.76E+03	1.85E-04	4.48E-07	3.27E-07	2.30E-07	2.65E+00	5.85E-01	1.61E+00	2.41E+00	6.42E-01	2.66E-03	
Cerium (58)	Ce-133m	1.24E+03	5.59E-04	9.95E-07	7.81E-07	5.25E-07	9.99E+00	1.89E+00	5.42E+00	8.59E+00	1.88E+00	9.28E-03	
Cerium (58)	Ce-134	8.00E+01	8.66E-03	1.34E-05	9.84E-06	6.33E-06	1.96E-02	1.21E-02	1.73E-02	1.94E-02	2.69E-02	4.90E-05	
Cerium (58)	Ce-135	3.43E+02	2.02E-03	1.24E-06	9.77E-07	6.22E-07	4.37E+00	9.06E-01	2.56E+00	3.94E+00	9.06E-01	4.22E-03	
Cerium (58)	Ce-137	6.75E+02	1.03E-03	1.32E-07	9.81E-08	5.00E-08	7.25E-02	2.30E-02	4.82E-02	6.72E-02	3.80E-02	9.90E-05	
Cerium (58)	Ce-137m	1.76E+02	3.93E-03	2.81E-06	2.05E-06	1.92E-06	1.89E-01	4.80E-02	1.23E-01	1.78E-01	5.81E-02	2.27E-04	
Cerium (58)	Ce-139	1.84E+00	3.77E-01	1.30E-06	9.77E-07	7.88E-06	5.79E-01	1.54E-01	4.09E-01	5.66E-01	1.67E-01	6.98E-04	
Cerium (58)	Ce-141	7.78E+00	8.91E-02	3.62E-06	2.64E-06	1.52E-05	2.91E-01	7.90E-02	2.11E-01	2.88E-01	8.15E-02	3.65E-04	
Cerium (58)	Ce-143	1.84E+02	3.77E-03	5.70E-06	4.18E-06	3.57E-06	1.36E+00	3.01E-01	8.31E-01	1.25E+00	3.50E-01	1.39E-03	
Cerium (58)	Ce-144	8.88E-01	7.81E-01	2.68E-05	1.94E-05	2.13E-04	6.31E-02	1.86E-02	4.73E-02	6.26E-02	2.02E-02	8.58E-05	
Cerium (58)	Ce-145	1.21E+05	5.73E-06	0.00E+00	0.00E+00	0.00E+00	4.46E+00	9.00E-01	2.54E+00	3.94E+00	9.82E-01	4.25E-03	
Californium (98)	Cf-244	1.88E+04	3.69E-05	3.53E-07	2.60E-07	5.85E-05	1.14E-04	1.13E-04	1.14E-04	1.14E-04	8.91E-04	5.04E-07	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Californium (98)	Cf-246	1.70E+02	4.08E-03	1.71E-05	1.22E-05	2.01E-03	2.88E-04	1.23E-04	2.02E-04	2.62E-04	6.60E-04	5.72E-07	
Californium (98)	Cf-247	1.95E+03	3.55E-04	1.07E-07	7.99E-08	1.54E-07	3.23E-01	9.21E-02	2.41E-01	3.19E-01	9.88E-02	4.18E-04	
Californium (98)	Cf-248	7.57E-01	9.15E-01	1.73E-04	1.05E-04	3.18E-02	2.15E-03	4.65E-04	1.15E-03	1.79E-03	1.11E-03	2.34E-06	
Californium (98)	Cf-249	1.97E-03	3.51E+02	1.65E-03	1.30E-03	6.59E-01	1.69E+00	3.66E-01	1.04E+00	1.57E+00	3.60E-01	1.67E-03	
Californium (98)	Cf-250	5.30E-02	1.31E+01	8.21E-04	5.96E-04	5.77E-02	6.11E-02	1.08E-02	3.10E-02	5.02E-02	1.14E-02	5.63E-05	
Californium (98)	Cf-251	7.70E-04	9.00E+02	1.68E-03	1.32E-03	6.70E-01	4.61E-01	1.23E-01	3.31E-01	4.52E-01	1.25E-01	5.65E-04	
Californium (98)	Cf-252	2.62E-01	2.65E+00	5.59E-04	3.35E-04	5.66E-02	2.84E+00	4.99E-01	1.44E+00	2.34E+00	5.05E-01	2.60E-03	
Californium (98)	Cf-253	1.42E+01	4.88E-02	1.02E-05	5.48E-06	6.51E-03	6.28E-04	5.10E-04	6.18E-04	6.28E-04	2.48E-03	3.68E-06	
Californium (98)	Cf-254	4.18E+00	1.66E-01	2.23E-03	1.49E-03	1.78E-01	1.05E+02	1.85E+01	5.31E+01	8.61E+01	1.87E+01	9.62E-02	
Californium (98)	Cf-255	4.29E+03	1.62E-04	2.02E-07	1.41E-07	2.72E-05	1.03E-03	4.41E-04	8.26E-04	1.02E-03	6.76E-03	1.35E-05	
Chlorine (17)	Cl-34	1.43E+07	4.84E-08	0.00E+00	0.00E+00	0.00E+00	5.79E+00	1.24E+00	3.44E+00	5.25E+00	1.37E+00	5.57E-03	
Chlorine (17)	Cl-34m	1.14E+04	6.09E-05	5.07E-07	3.85E-07	2.04E-07	1.32E+01	2.26E+00	6.59E+00	1.08E+01	2.23E+00	1.20E-02	
Chlorine (17)	Cl-36	2.30E-06	3.01E+05	4.59E-06	3.43E-06	1.48E-04	2.43E-03	8.95E-04	1.78E-03	2.34E-03	1.30E-02	1.94E-05	
Chlorine (17)	Cl-38	9.78E+03	7.09E-05	5.77E-07	4.33E-07	2.11E-07	9.56E+00	1.59E+00	4.58E+00	7.60E+00	1.64E+00	8.59E-03	
Chlorine (17)	Cl-39	6.55E+03	1.06E-04	4.18E-07	3.15E-07	2.14E-07	8.91E+00	1.61E+00	4.63E+00	7.47E+00	1.66E+00	8.14E-03	
Chlorine (17)	Cl-40	2.70E+05	2.57E-06	0.00E+00	0.00E+00	0.00E+00	2.71E+01	4.30E+00	1.25E+01	2.11E+01	4.21E+00	2.44E-02	
Curium (96)	Cm-238	2.53E+03	2.74E-04	3.02E-07	2.34E-07	7.70E-06	2.62E-01	7.86E-02	2.02E-01	2.60E-01	8.16E-02	3.56E-04	
Curium (96)	Cm-239	2.09E+03	3.31E-04	4.03E-07	3.03E-07	2.98E-07	1.02E+00	2.69E-01	7.27E-01	9.99E-01	2.69E-01	1.23E-03	
Curium (96)	Cm-240	9.37E+00	7.40E-02	4.14E-05	2.83E-05	1.40E-02	1.57E-04	1.16E-04	1.44E-04	1.56E-04	8.76E-04	5.30E-07	
Curium (96)	Cm-241	7.71E+00	8.99E-02	4.59E-06	3.42E-06	1.49E-04	2.45E+00	5.42E-01	1.52E+00	2.26E+00	5.42E-01	2.48E-03	
Curium (96)	Cm-242	1.55E+00	4.46E-01	7.10E-05	4.33E-05	2.39E-02	1.29E-04	9.94E-05	1.17E-04	1.27E-04	7.81E-04	4.55E-07	
Curium (96)	Cm-243	2.38E-02	2.91E+01	6.66E-04	5.55E-04	5.77E-02	5.36E-01	1.36E-01	3.70E-01	5.19E-01	1.38E-01	6.22E-04	
Curium (96)	Cm-244	3.83E-02	1.81E+01	5.59E-04	4.55E-04	5.33E-02	2.00E-04	9.96E-05	1.44E-04	1.81E-04	6.84E-04	4.67E-07	
Curium (96)	Cm-245	8.15E-05	8.50E+03	8.95E-04	7.70E-04	3.70E-01	3.53E-01	1.03E-01	2.67E-01	3.49E-01	1.06E-01	4.67E-04	
Curium (96)	Cm-246	1.46E-04	4.76E+03	8.92E-04	7.66E-04	3.70E-01	2.26E-02	4.02E-03	1.15E-02	1.85E-02	4.52E-03	2.09E-05	
Curium (96)	Cm-247	4.44E-08	1.56E+07	8.21E-04	7.07E-04	3.39E-01	1.65E+00	3.55E-01	1.01E+00	1.53E+00	3.48E-01	1.61E-03	
Curium (96)	Cm-248	1.99E-06	3.48E+05	3.34E-03	2.87E-03	1.36E+00	8.16E+00	1.44E+00	4.13E+00	6.71E+00	1.46E+00	7.48E-03	
Curium (96)	Cm-249	5.68E+03	1.22E-04	1.57E-07	1.15E-07	1.41E-07	1.08E-01	2.26E-02	6.31E-02	9.69E-02	3.86E-02	1.19E-04	
Curium (96)	Cm-250	8.35E-05	8.30E+03	2.29E-02	1.96E-02	9.29E+00	8.29E+01	1.46E+01	4.20E+01	6.82E+01	1.48E+01	7.61E-02	
Curium (96)	Cm-251	2.17E+04	3.20E-05	1.43E-07	1.06E-07	1.03E-07	6.01E-01	1.28E-01	3.59E-01	5.45E-01	1.72E-01	6.07E-04	
Cobalt (27)	Co-54m	2.46E+05	2.82E-06	0.00E+00	0.00E+00	0.00E+00	2.34E+01	4.45E+00	1.27E+01	2.02E+01	4.50E+00	2.16E-02	
Cobalt (27)	Co-55	3.46E+02	2.00E-03	4.70E-06	3.81E-06	2.39E-06	1.15E+01	2.24E+00	6.43E+00	1.01E+01	2.24E+00	1.07E-02	
Cobalt (27)	Co-56	3.28E+00	2.12E-01	1.27E-05	9.36E-06	2.73E-05	2.28E+01	3.94E+00	1.14E+01	1.87E+01	3.82E+00	2.06E-02	
Cobalt (27)	Co-57	9.31E-01	7.44E-01	1.16E-06	7.81E-07	4.14E-06	4.56E-01	1.28E-01	3.40E-01	4.50E-01	1.27E-01	5.81E-04	
Cobalt (27)	Co-58	3.57E+00	1.94E-01	3.74E-06	2.77E-06	8.66E-06	5.60E+00	1.09E+00	3.14E+00	4.93E+00	1.08E+00	5.18E-03	
Cobalt (27)	Co-58m	6.72E+02	1.03E-03	1.15E-07	8.84E-08	7.14E-08	1.79E-06	1.75E-06	1.79E-06	1.79E-06	7.81E-06	7.11E-09	
Cobalt (27)	Co-60	1.31E-01	5.27E+00	2.03E-05	1.27E-05	1.22E-04	1.54E+01	2.75E+00	7.98E+00	1.54E+01	2.69E+00	1.39E-02	
Cobalt (27)	Co-60m	3.48E+04	1.99E-05	8.40E-09	6.22E-09	5.55E-09	2.24E-02	4.61E-03	1.23E-02	1.89E-02	4.96E-03	2.27E-05	
Cobalt (27)	Co-61	3.68E+03	1.88E-04	3.70E-07	2.78E-07	2.20E-07	3.59E-01	1.00E-01	2.41E-01	3.29E-01	1.59E-01	4.74E-04	
Cobalt (27)	Co-62	2.43E+05	2.85E-06	0.00E+00	0.00E+00	0.00E+00	1.02E+01	1.80E+00	5.16E+00	8.39E+00	1.88E+00	9.25E-03	
Cobalt (27)	Co-62m	2.62E+04	2.65E-05	2.40E-07	1.82E-07	9.32E-08	1.68E+01	2.97E+00	8.57E+00	1.39E+01	3.00E+00	1.52E-02	
Chromium (24)	Cr-48	2.82E+02	2.46E-03	9.14E-07	7.29E-07	8.99E-07	2.05E+00	4.82E-01	1.34E+00	1.96E+00	4.73E-01	2.20E-03	
Chromium (24)	Cr-49	8.61E+03	8.05E-05	3.01E-07	2.28E-07	1.55E-07	5.59E+00	1.19E+00	3.36E+00	5.10E+00	1.25E+00	5.46E-03	
Chromium (24)	Cr-51	9.13E+00	7.59E-02	1.86E-07	1.43E-07	1.61E-07	1.63E-01	3.59E-02	1.02E-01	1.53E-01	3.50E-02	1.63E-04	
Chromium (24)	Cr-55	1.04E+05	6.65E-06	0.00E+00	0.00E+00	0.00E+00	5.79E-02	3.16E-02	4.50E-02	5.51E-02	1.51E-01	1.17E-04	
Chromium (24)	Cr-56	6.13E+04	1.13E-05	0.00E+00	0.00E+00	0.00E+00	2.32E-01	8.84E-02	1.94E-01	2.32E-01	1.73E-01	4.05E-04	
Cesium (55)	Cs-121	1.41E+05	4.92E-06	0.00E+00	0.00E+00	0.00E+00	6.54E+00	1.39E+00	3.87E+00	5.92E+00	1.50E+00	6.32E-03	
Cesium (55)	Cs-121m	1.79E+05	3.87E-06	0.00E+00	0.00E+00	0.00E+00	6.48E+00	1.38E+00	3.85E+00	5.88E+00	1.46E+00	6.28E-03	
Cesium (55)	Cs-123	6.19E+04	1.12E-05	0.00E+00	0.00E+00	0.00E+00	5.96E+00	1.24E+00	3.49E+00	5.36E+00	1.32E+00	5.71E-03	
Cesium (55)	Cs-124	7.10E+05	9.77E-07	0.00E+00	0.00E+00	0.00E+00	6.61E+00	1.39E+00	3.87E+00	5.94E+00	1.50E+00	6.34E-03	
Cesium (55)	Cs-125	8.09E+03	8.56E-05	1.69E-07	1.28E-07	9.10E-08	4.15E+00	8.44E-01	2.39E+00	3.70E+00	8.81E-01	3.93E-03	

Dose Conversion Factors October 2024												
Radionuclides		Isotope-specific Information and Dose Conversion Factors										
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)		
Cesium (55)	Cs-126	2.22E+05	3.12E-06	0.00E+00	0.00E+00	0.00E+00	6.46E+00	1.35E+00	3.79E+00	5.83E+00	1.44E+00	6.18E-03
Cesium (55)	Cs-127	9.71E+02	7.13E-04	1.14E-07	9.21E-08	1.75E-07	2.20E+00	4.69E-01	1.32E+00	2.02E+00	4.77E-01	2.15E-03
Cesium (55)	Cs-128	1.00E+05	6.93E-06	0.00E+00	0.00E+00	0.00E+00	4.93E+00	1.03E+00	2.90E+00	4.45E+00	1.11E+00	4.72E-03
Cesium (55)	Cs-129	1.89E+02	3.66E-03	2.78E-07	2.24E-07	3.46E-07	1.32E+00	2.90E-01	8.07E-01	1.22E+00	3.04E-01	1.31E-03
Cesium (55)	Cs-130	1.25E+04	5.56E-05	1.32E-07	9.92E-08	5.99E-08	2.73E+00	5.68E-01	1.60E+00	2.47E+00	6.14E-01	2.60E-03
Cesium (55)	Cs-130m	1.05E+05	6.58E-06	0.00E+00	0.00E+00	0.00E+00	1.47E-01	5.34E-02	1.17E-01	1.44E-01	7.32E-02	2.35E-04
Cesium (55)	Cs-131	2.61E+01	2.65E-02	2.67E-07	2.15E-07	2.11E-07	7.88E-03	7.08E-03	7.88E-03	7.88E-03	2.10E-02	2.80E-05
Cesium (55)	Cs-132	3.90E+01	1.78E-02	2.22E-06	1.90E-06	1.35E-06	3.94E+00	7.90E-01	2.24E+00	3.51E+00	7.91E-01	3.68E-03
Cesium (55)	Cs-134	3.36E-01	2.06E+00	6.92E-05	7.14E-05	8.21E-05	8.89E+00	1.75E+00	5.02E+00	7.86E+00	1.73E+00	8.26E-03
Cesium (55)	Cs-134m	2.09E+03	3.31E-04	9.66E-08	7.47E-08	2.51E-07	6.54E-02	2.05E-02	4.95E-02	6.48E-02	2.63E-02	9.34E-05
Cesium (55)	Cs-135	3.01E-07	2.30E+06	9.77E-06	9.81E-06	4.63E-05	7.83E-05	3.49E-05	6.76E-05	7.81E-05	5.92E-05	2.53E-06
Cesium (55)	Cs-135m	6.87E+03	1.01E-04	8.77E-08	7.18E-08	7.14E-08	9.28E+00	1.80E+00	5.16E+00	8.11E+00	1.78E+00	8.54E-03
Cesium (55)	Cs-136	1.92E+01	3.61E-02	1.28E-05	1.12E-05	1.12E-05	1.24E+01	2.37E+00	6.82E+00	1.08E+01	2.33E+00	1.15E-02
Cesium (55)	Cs-137	2.30E-02	3.02E+01	4.92E-05	5.03E-05	1.54E-04	8.69E-04	4.02E-04	7.01E-04	8.54E-04	3.66E-03	1.10E-05
Cesium (55)	Cs-138	1.09E+04	6.36E-05	4.74E-07	3.57E-07	2.00E-07	1.48E+01	2.60E+00	7.51E+00	1.22E+01	2.64E+00	1.34E-02
Cesium (55)	Cs-138m	1.25E+05	5.54E-06	0.00E+00	0.00E+00	0.00E+00	2.39E+00	4.54E-01	1.29E+00	2.04E+00	4.76E-01	2.24E-03
Cesium (55)	Cs-139	3.93E+04	1.76E-05	0.00E+00	0.00E+00	0.00E+00	2.05E+00	3.87E-01	1.04E+00	1.68E+00	5.06E-01	1.94E-03
Cesium (55)	Cs-140	3.43E+05	2.02E-06	0.00E+00	0.00E+00	0.00E+00	1.14E+01	1.98E+00	5.66E+00	9.25E+00	2.03E+00	1.04E-02
Copper (29)	Cu-57	1.11E+08	6.22E-09	0.00E+00	0.00E+00	0.00E+00	6.86E+00	1.47E+00	4.02E+00	6.15E+00	1.59E+00	6.60E-03
Copper (29)	Cu-59	2.68E+05	2.58E-06	0.00E+00	0.00E+00	0.00E+00	8.26E+00	1.68E+00	4.73E+00	7.34E+00	1.78E+00	7.80E-03
Copper (29)	Cu-60	1.54E+04	4.51E-05	3.45E-07	2.66E-07	1.56E-07	2.41E+01	4.30E+00	1.24E+01	2.00E+01	4.27E+00	2.20E-02
Copper (29)	Cu-61	1.82E+03	3.80E-04	5.51E-07	4.29E-07	3.34E-07	4.54E+00	9.34E-01	2.65E+00	4.11E+00	9.53E-01	4.32E-03
Copper (29)	Cu-62	3.77E+04	1.84E-05	0.00E+00	0.00E+00	0.00E+00	5.60E+00	1.18E+00	3.31E+00	5.08E+00	1.30E+00	5.37E-03
Copper (29)	Cu-64	4.78E+02	1.45E-03	5.88E-07	4.55E-07	5.03E-07	1.02E+00	2.09E-01	5.96E-01	9.19E-01	2.08E-01	9.68E-04
Copper (29)	Cu-66	7.11E+04	9.74E-06	0.00E+00	0.00E+00	0.00E+00	6.37E-01	1.38E-01	3.55E-01	5.49E-01	2.51E-01	6.42E-04
Copper (29)	Cu-67	9.82E+01	7.06E-03	1.61E-06	1.22E-06	2.45E-06	4.88E-01	1.24E-01	3.40E-01	4.74E-01	1.23E-01	5.73E-04
Copper (29)	Cu-69	1.28E+05	5.42E-06	0.00E+00	0.00E+00	0.00E+00	3.18E+00	6.11E-01	1.73E+00	2.73E+00	6.98E-01	2.95E-03
Dysprosium (66)	Dy-148	1.10E+05	6.28E-06	0.00E+00	0.00E+00	0.00E+00	3.89E+00	7.94E-01	2.24E+00	3.47E+00	7.96E-01	3.68E-03
Dysprosium (66)	Dy-149	8.67E+04	7.99E-06	0.00E+00	0.00E+00	0.00E+00	9.53E+00	1.76E+00	5.02E+00	8.05E+00	1.74E+00	8.78E-03
Dysprosium (66)	Dy-150	5.08E+04	1.36E-05	0.00E+00	0.00E+00	0.00E+00	1.37E+00	3.04E-01	8.46E-01	1.27E+00	3.07E-01	1.38E-03
Dysprosium (66)	Dy-151	2.03E+04	3.41E-05	9.32E-08	7.29E-08	5.59E-07	7.90E+00	1.50E+00	4.30E+00	6.80E+00	1.48E+00	7.33E-03
Dysprosium (66)	Dy-152	2.55E+03	2.72E-04	5.25E-07	4.03E-07	2.76E-07	1.27E+00	3.03E-01	8.33E-01	1.21E+00	3.09E-01	1.38E-03
Dysprosium (66)	Dy-153	9.49E+02	7.31E-04	8.58E-07	6.62E-07	5.59E-07	4.60E+00	9.28E-01	2.60E+00	4.02E+00	9.41E-01	4.46E-03
Dysprosium (66)	Dy-154	2.31E-07	3.00E+06	2.69E-04	2.06E-04	2.26E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dysprosium (66)	Dy-155	6.13E+02	1.13E-03	6.81E-07	5.37E-07	4.03E-07	3.57E+00	7.21E-01	2.04E+00	3.14E+00	7.22E-01	3.46E-03
Dysprosium (66)	Dy-157	7.46E+02	9.29E-04	2.87E-07	2.28E-07	1.39E-07	1.62E+00	3.72E-01	1.03E+00	1.52E+00	3.79E-01	1.68E-03
Dysprosium (66)	Dy-159	1.75E+00	3.96E-01	5.22E-07	3.92E-07	1.90E-06	4.52E-02	2.86E-02	4.43E-02	4.52E-02	4.57E-02	1.17E-04
Dysprosium (66)	Dy-165	2.60E+03	2.66E-04	5.51E-07	4.03E-07	2.78E-07	1.27E-01	3.21E-02	8.00E-02	1.16E-01	8.11E-02	1.62E-04
Dysprosium (66)	Dy-165m	2.90E+05	2.39E-06	0.00E+00	0.00E+00	0.00E+00	7.15E-02	1.81E-02	4.67E-02	6.67E-02	2.00E-02	8.27E-05
Dysprosium (66)	Dy-166	7.44E+01	9.32E-03	8.47E-06	6.14E-06	8.88E-06	8.54E-02	3.44E-02	7.01E-02	8.37E-02	4.40E-02	1.53E-04
Dysprosium (66)	Dy-167	5.87E+04	1.18E-05	0.00E+00	0.00E+00	0.00E+00	2.84E+00	6.05E-01	1.70E+00	2.58E+00	6.79E-01	2.80E-03
Dysprosium (66)	Dy-168	4.19E+04	1.66E-05	0.00E+00	0.00E+00	0.00E+00	2.00E+00	4.37E-01	1.22E+00	1.84E+00	4.69E-01	2.02E-03
Erbium (68)	Er-154	9.77E+04	7.10E-06	0.00E+00	0.00E+00	0.00E+00	2.00E-01	5.98E-02	1.35E-01	1.85E-01	7.86E-02	2.62E-04
Erbium (68)	Er-156	1.87E+04	3.71E-05	1.67E-07	1.27E-07	8.81E-08	1.18E-01	4.71E-02	9.30E-02	1.14E-01	6.63E-02	2.01E-04
Erbium (68)	Er-159	1.01E+04	6.85E-05	1.08E-07	8.55E-08	7.66E-08	5.42E+00	1.05E+00	2.99E+00	4.71E+00	1.05E+00	5.09E-03
Erbium (68)	Er-161	1.89E+03	3.66E-04	4.00E-07	3.14E-07	2.38E-07	5.57E+00	1.09E+00	3.08E+00	4.84E+00	1.08E+00	5.21E-03
Erbium (68)	Er-163	4.86E+03	1.43E-04	1.25E-08	9.73E-09	5.77E-09	4.99E-02	2.76E-02	4.61E-02	4.91E-02	4.06E-02	1.15E-04
Erbium (68)	Er-165	5.86E+02	1.18E-03	9.51E-08	7.25E-08	3.85E-08	4.24E-02	2.54E-02	4.13E-02	4.24E-02	3.80E-02	1.05E-04
Erbium (68)	Er-167m	9.63E+06	7.19E-08	0.00E+00	0.00E+00	0.00E+00	4.15E-01	1.03E-01	2.80E-01	4.02E-01	1.03E-01	4.71E-04
Erbium (68)	Er-169	2.69E+01	2.58E-02	1.91E-06	1.38E-06	4.74E-06	1.27E-04	5.21E-05	1.06E-04	1.26E-04	8.16E-05	3.44E-06
Erbium (68)	Er-171	8.08E+02	8.58E-04	1.79E-06	1.32E-06	9.99E-07	1.77E+00	4.09E-01	1.14E+00	1.67E+00	4.41E-01	1.88E-03

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Erbium (68)	Er-172	1.23E+02	5.63E-03	5.18E-06	3.85E-06	5.14E-06	2.67E+00	5.70E-01	1.60E+00	2.43E+00	5.73E-01	2.62E-03	
Erbium (68)	Er-173	2.54E+05	2.73E-06	0.00E+00	0.00E+00	0.00E+00	4.39E+00	9.23E-01	2.58E+00	3.92E+00	9.90E-01	4.36E-03	
Einsteinium (99)	Es-249	3.56E+03	1.94E-04	1.01E-07	7.88E-08	8.88E-07	2.04E+00	4.46E-01	1.25E+00	1.86E+00	4.44E-01	2.07E-03	
Einsteinium (99)	Es-250	7.06E+02	9.82E-04	2.29E-06	1.72E-06	5.48E-06	6.26E+00	1.31E+00	3.68E+00	5.62E+00	1.31E+00	6.13E-03	
Einsteinium (99)	Es-250m	2.73E+03	2.53E-04	1.45E-07	1.14E-07	1.15E-06	3.06E+00	5.98E-01	1.70E+00	2.65E+00	5.94E-01	2.91E-03	
Einsteinium (99)	Es-251	1.84E+02	3.77E-03	9.07E-07	6.66E-07	8.58E-06	3.19E-01	9.21E-02	2.41E-01	3.18E-01	9.71E-02	4.18E-04	
Einsteinium (99)	Es-253	1.24E+01	5.61E-02	3.41E-05	2.24E-05	1.27E-02	1.59E-03	3.85E-04	1.01E-03	1.48E-03	5.85E-04	1.75E-06	
Einsteinium (99)	Es-254	9.17E-01	7.55E-01	1.70E-04	1.04E-04	3.21E-02	1.08E-02	3.89E-03	8.03E-03	1.04E-02	1.03E-02	1.72E-05	
Einsteinium (99)	Es-254m	1.54E+02	4.49E-03	2.22E-05	1.60E-05	2.09E-03	2.65E+00	5.31E-01	1.51E+00	2.37E+00	5.37E-01	2.49E-03	
Einsteinium (99)	Es-255	6.36E+00	1.09E-01	3.67E-05	2.21E-05	1.83E-02	4.30E-03	7.71E-04	2.20E-03	3.53E-03	7.98E-04	5.78E-06	
Einsteinium (99)	Es-256	1.43E+04	4.83E-05	1.43E-05	1.09E-05	1.68E-04	1.47E-02	9.02E-03	1.23E-02	1.44E-02	7.79E-02	5.06E-05	
Europium (63)	Eu-142	9.34E+06	7.42E-08	0.00E+00	0.00E+00	0.00E+00	7.08E+00	1.48E+00	4.07E+00	6.30E+00	1.59E+00	6.75E-03	
Europium (63)	Eu-142m	2.98E+05	2.33E-06	0.00E+00	0.00E+00	0.00E+00	1.98E+01	3.92E+00	1.12E+01	1.75E+01	3.97E+00	1.84E-02	
Europium (63)	Eu-143	1.41E+05	4.93E-06	0.00E+00	0.00E+00	0.00E+00	6.52E+00	1.30E+00	3.66E+00	5.72E+00	1.38E+00	6.14E-03	
Europium (63)	Eu-144	2.14E+06	3.23E-07	0.00E+00	0.00E+00	0.00E+00	6.35E+00	1.32E+00	3.64E+00	5.64E+00	1.41E+00	6.05E-03	
Europium (63)	Eu-145	4.27E+01	1.62E-02	3.09E-06	2.46E-06	2.25E-06	7.58E+00	1.39E+00	4.00E+00	6.41E+00	1.38E+00	6.95E-03	
Europium (63)	Eu-146	5.49E+01	1.26E-02	5.59E-06	4.48E-06	3.44E-06	1.40E+01	2.65E+00	7.62E+00	1.21E+01	2.62E+00	1.30E-02	
Europium (63)	Eu-147	1.05E+01	6.60E-02	2.12E-06	1.64E-06	4.85E-06	2.41E+00	5.01E-01	1.39E+00	2.15E+00	5.12E-01	2.37E-03	
Europium (63)	Eu-148	4.64E+00	1.49E-01	4.59E-06	4.81E-06	1.53E-05	1.26E+01	2.48E+00	7.10E+00	1.11E+01	2.45E+00	1.18E-02	
Europium (63)	Eu-149	2.72E+00	2.55E-01	7.96E-07	5.96E-07	1.81E-06	1.92E-01	5.40E-02	1.29E-01	1.81E-01	6.84E-02	2.37E-04	
Europium (63)	Eu-150	1.88E-02	3.69E+01	5.81E-06	4.63E-06	4.96E-04	8.50E+00	1.73E+00	4.93E+00	7.62E+00	1.72E+00	8.08E-03	
Europium (63)	Eu-150m	4.74E+02	1.46E-03	1.95E-06	1.42E-06	9.03E-07	2.60E-01	5.53E-02	1.53E-01	2.34E-01	8.19E-02	2.72E-04	
Europium (63)	Eu-152	5.12E-02	1.35E+01	6.44E-06	4.96E-06	3.67E-04	6.74E+00	1.29E+00	3.68E+00	5.81E+00	1.27E+00	6.28E-03	
Europium (63)	Eu-152m	6.52E+02	1.06E-03	2.52E-06	1.85E-06	9.29E-07	1.68E+00	3.34E-01	9.34E-01	1.46E+00	3.93E-01	1.60E-03	
Europium (63)	Eu-152n	3.79E+03	1.83E-04	6.51E-08	4.81E-08	3.55E-08	1.96E-01	6.91E-02	1.62E-01	1.96E-01	7.60E-02	3.07E-04	
Europium (63)	Eu-154	8.06E-02	8.59E+00	9.66E-06	7.29E-06	4.26E-04	7.29E+00	1.38E+00	3.96E+00	6.28E+00	1.37E+00	6.75E-03	
Europium (63)	Eu-154m	7.92E+03	8.75E-05	3.92E-08	2.95E-08	1.76E-08	1.47E-01	5.73E-02	1.25E-01	1.47E-01	6.99E-02	2.51E-04	
Europium (63)	Eu-155	1.46E-01	4.76E+00	1.67E-06	1.23E-06	2.41E-05	1.63E-01	5.70E-02	1.33E-01	1.63E-01	6.30E-02	2.53E-04	
Europium (63)	Eu-156	1.67E+01	4.16E-02	1.14E-05	8.47E-06	1.63E-05	7.64E+00	1.35E+00	3.90E+00	6.33E+00	1.36E+00	6.94E-03	
Europium (63)	Eu-157	4.00E+02	1.73E-03	3.10E-06	2.27E-06	1.41E-06	1.40E+00	3.14E-01	8.56E-01	1.28E+00	3.57E-01	1.44E-03	
Europium (63)	Eu-158	7.94E+03	8.73E-05	4.48E-07	3.38E-07	2.16E-07	7.79E+00	1.45E+00	4.15E+00	6.61E+00	1.52E+00	7.17E-03	
Europium (63)	Eu-159	2.01E+04	3.44E-05	2.43E-07	1.81E-07	1.05E-07	1.47E+00	3.31E-01	8.67E-01	1.30E+00	4.44E-01	1.54E-03	
Fluorine (9)	F-17	3.39E+05	2.04E-06	0.00E+00	0.00E+00	0.00E+00	5.62E+00	1.17E+00	3.33E+00	5.10E+00	1.25E+00	5.37E-03	
Fluorine (9)	F-18	3.32E+03	2.09E-04	2.31E-07	1.77E-07	2.46E-07	5.44E+00	1.12E+00	3.19E+00	4.93E+00	1.11E+00	5.15E-03	
Iron (26)	Fe-52	7.34E+02	9.45E-04	6.77E-06	5.11E-06	2.85E-06	3.89E+00	8.33E-01	2.35E+00	3.57E+00	8.30E-01	3.83E-03	
Iron (26)	Fe-53	4.28E+04	1.62E-05	0.00E+00	0.00E+00	0.00E+00	6.52E+00	1.37E+00	3.85E+00	5.90E+00	1.46E+00	6.25E-03	
Iron (26)	Fe-53m	1.44E+05	4.81E-06	0.00E+00	0.00E+00	0.00E+00	1.85E+01	3.36E+00	9.73E+00	1.57E+01	3.28E+00	1.68E-02	
Iron (26)	Fe-55	2.53E-01	2.74E+00	2.04E-06	1.22E-06	3.34E-06	6.15E-10	1.72E-10	4.58E-10	6.09E-10	1.70E-10	7.81E-13	
Iron (26)	Fe-59	5.68E+00	1.22E-01	1.01E-05	6.62E-06	1.65E-05	7.23E+00	1.31E+00	3.79E+00	6.11E+00	1.29E+00	6.56E-03	
Iron (26)	Fe-60	4.62E-07	1.50E+06	5.48E-04	4.29E-04	1.10E-03	2.43E-05	1.30E-05	2.22E-05	2.43E-05	2.68E-05	8.09E-07	
Iron (26)	Fe-61	6.09E+04	1.14E-05	0.00E+00	0.00E+00	0.00E+00	8.50E+00	1.56E+00	4.46E+00	7.17E+00	1.64E+00	7.80E-03	
Iron (26)	Fe-62	3.21E+05	2.16E-06	0.00E+00	0.00E+00	0.00E+00	2.80E+00	5.92E-01	1.66E+00	2.54E+00	6.84E-01	2.71E-03	
Fermium (100)	Fm-251	1.15E+03	6.05E-04	3.64E-07	2.70E-07	7.99E-06	6.67E-01	1.61E-01	4.37E-01	6.26E-01	1.64E-01	7.41E-04	
Fermium (100)	Fm-252	2.39E+02	2.90E-03	1.48E-05	1.06E-05	1.54E-03	1.70E-03	4.05E-04	9.49E-04	1.44E-03	1.05E-03	2.00E-06	
Fermium (100)	Fm-253	8.43E+01	8.22E-03	6.44E-06	4.37E-06	1.84E-03	2.13E-01	5.96E-02	1.57E-01	2.09E-01	6.56E-02	2.71E-04	
Fermium (100)	Fm-254	1.87E+03	3.70E-04	2.33E-06	1.69E-06	2.75E-04	4.37E-02	7.77E-03	2.22E-02	3.59E-02	8.48E-03	4.05E-05	
Fermium (100)	Fm-255	3.02E+02	2.29E-03	1.31E-05	9.44E-06	1.18E-03	5.38E-03	2.50E-03	4.56E-03	5.34E-03	8.37E-03	1.11E-05	
Fermium (100)	Fm-256	2.31E+03	3.00E-04	9.25E-05	7.07E-05	1.05E-03	7.71E+01	1.36E+01	3.92E+01	6.35E+01	1.37E+01	7.09E-02	
Fermium (100)	Fm-257	2.52E+00	2.75E-01	1.09E-04	6.03E-05	3.39E-02	6.22E-01	1.49E-01	4.07E-01	5.81E-01	1.54E-01	7.03E-04	
Francium (87)	Fr-212	1.82E+04	3.81E-05	3.26E-06	2.61E-06	2.58E-05	6.56E+00	1.25E+00	3.57E+00	5.64E+00	1.23E+00	6.14E-03	
Francium (87)	Fr-219	1.09E+09	6.34E-10	0.00E+00	0.00E+00	0.00E+00	1.84E-02	4.02E-03	1.13E-02	1.70E-02	3.94E-03	1.83E-05	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Francium (87)	Fr-220	7.98E+05	8.69E-07	0.00E+00	0.00E+00	0.00E+00	2.93E-02	9.13E-03	2.26E-02	2.90E-02	9.88E-03	4.11E-05	
Francium (87)	Fr-221	7.43E+04	9.32E-06	0.00E+00	0.00E+00	0.00E+00	1.33E-01	3.19E-02	8.93E-02	1.28E-01	3.14E-02	1.46E-04	
Francium (87)	Fr-222	2.57E+04	2.70E-05	3.31E-06	2.63E-06	1.14E-04	8.67E-01	2.04E-01	5.55E-01	8.09E-01	2.76E-01	9.54E-04	
Francium (87)	Fr-223	1.66E+04	4.19E-05	1.20E-05	8.81E-06	4.92E-05	1.76E-01	5.27E-02	1.25E-01	1.67E-01	9.04E-02	2.51E-04	
Francium (87)	Fr-224	1.09E+05	6.34E-06	0.00E+00	0.00E+00	0.00E+00	3.21E+00	6.24E-01	1.76E+00	2.76E+00	7.01E-01	3.06E-03	
Francium (87)	Fr-227	1.47E+05	4.70E-06	0.00E+00	0.00E+00	0.00E+00	2.28E+00	5.04E-01	1.38E+00	2.07E+00	5.88E-01	2.34E-03	
Gallium (31)	Ga-64	1.39E+05	5.00E-06	0.00E+00	0.00E+00	0.00E+00	2.09E+01	3.72E+00	1.07E+01	1.73E+01	3.72E+00	1.91E-02	
Gallium (31)	Ga-65	2.40E+04	2.89E-05	1.80E-07	1.36E-07	7.62E-08	6.31E+00	1.33E+00	3.74E+00	5.72E+00	1.40E+00	6.11E-03	
Gallium (31)	Ga-66	6.40E+02	1.08E-03	5.88E-06	4.37E-06	2.11E-06	1.59E+01	2.67E+00	7.75E+00	1.28E+01	2.64E+00	1.45E-02	
Gallium (31)	Ga-67	7.76E+01	8.93E-03	9.62E-07	7.25E-07	1.11E-06	6.87E-01	1.69E-01	4.61E-01	6.58E-01	1.67E-01	7.67E-04	
Gallium (31)	Ga-68	5.38E+03	1.29E-04	5.03E-07	3.77E-07	2.27E-07	5.25E+00	1.09E+00	3.08E+00	4.76E+00	1.17E+00	5.01E-03	
Gallium (31)	Ga-70	1.72E+04	4.02E-05	1.56E-07	1.16E-07	7.22E-08	6.05E-02	1.89E-02	3.79E-02	5.42E-02	9.88E-02	9.66E-05	
Gallium (31)	Ga-72	4.31E+02	1.61E-03	5.44E-06	4.14E-06	2.49E-06	1.69E+01	2.95E+00	8.54E+00	1.39E+01	2.90E+00	1.53E-02	
Gallium (31)	Ga-73	1.25E+03	5.55E-04	1.33E-06	9.77E-07	6.77E-07	1.80E+00	3.92E-01	1.11E+00	1.67E+00	4.34E-01	1.82E-03	
Gallium (31)	Ga-74	4.49E+04	1.54E-05	0.00E+00	0.00E+00	0.00E+00	2.00E+01	3.42E+00	9.90E+00	1.63E+01	3.39E+00	1.81E-02	
Gadolinium (64)	Gd-142	3.11E+05	2.23E-06	0.00E+00	0.00E+00	0.00E+00	5.90E+00	1.18E+00	3.34E+00	5.21E+00	1.24E+00	5.58E-03	
Gadolinium (64)	Gd-143m	1.99E+05	3.49E-06	0.00E+00	0.00E+00	0.00E+00	1.21E+01	2.39E+00	6.78E+00	1.06E+01	2.45E+00	1.14E-02	
Gadolinium (64)	Gd-144	8.15E+04	8.50E-06	0.00E+00	0.00E+00	0.00E+00	5.31E+00	1.01E+00	2.86E+00	4.54E+00	1.05E+00	4.96E-03	
Gadolinium (64)	Gd-145	1.58E+04	4.38E-05	1.63E-07	1.27E-07	7.81E-08	1.53E+01	2.60E+00	7.55E+00	1.24E+01	2.56E+00	1.38E-02	
Gadolinium (64)	Gd-145m	2.57E+05	2.70E-06	0.00E+00	0.00E+00	0.00E+00	3.85E+00	7.68E-01	2.19E+00	3.42E+00	7.80E-01	3.60E-03	
Gadolinium (64)	Gd-146	5.24E+00	1.32E-01	4.66E-06	3.53E-06	2.88E-05	7.30E-01	2.30E-01	5.55E-01	7.23E-01	2.62E-01	1.02E-03	
Gadolinium (64)	Gd-147	1.59E+02	4.35E-03	3.02E-06	2.38E-06	1.92E-06	7.73E+00	1.55E+00	4.41E+00	6.84E+00	1.53E+00	7.34E-03	
Gadolinium (64)	Gd-148	9.29E+03	7.46E+01	2.66E-04	2.02E-04	2.45E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Gadolinium (64)	Gd-149	2.73E+01	2.54E-02	2.65E-06	2.03E-06	3.89E-06	2.58E+00	5.68E-01	1.57E+00	2.35E+00	5.77E-01	2.62E-03	
Gadolinium (64)	Gd-150	3.87E-07	1.79E+06	2.51E-04	1.94E-04	2.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Gadolinium (64)	Gd-151	2.04E+00	3.40E-01	1.14E-06	8.40E-07	4.85E-06	1.83E-01	5.72E-02	1.32E-01	1.78E-01	7.21E-02	2.51E-04	
Gadolinium (64)	Gd-152	6.42E-15	1.08E+14	1.97E-04	1.52E-04	7.44E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Gadolinium (64)	Gd-153	1.05E+00	6.59E-01	1.38E-06	1.03E-06	9.81E-06	2.13E-01	8.37E-02	1.77E-01	2.13E-01	1.08E-01	3.63E-04	
Gadolinium (64)	Gd-159	3.29E+02	2.11E-03	2.57E-06	1.87E-06	1.30E-06	2.43E-01	5.75E-02	1.54E-01	2.26E-01	8.15E-02	2.74E-04	
Gadolinium (64)	Gd-162	4.34E+04	1.60E-05	0.00E+00	0.00E+00	0.00E+00	2.22E+00	4.73E-01	1.34E+00	2.04E+00	4.89E-01	2.17E-03	
Germanium (32)	Ge-66	2.69E+03	2.58E-04	4.74E-07	3.77E-07	4.07E-07	3.55E+00	7.51E-01	2.13E+00	3.23E+00	7.49E-01	3.47E-03	
Germanium (32)	Ge-67	1.93E+04	3.60E-05	2.93E-07	2.20E-07	1.10E-07	7.96E+00	1.63E+00	4.61E+00	7.10E+00	1.72E+00	7.64E-03	
Germanium (32)	Ge-68	9.34E-01	7.42E-01	6.25E-06	4.74E-06	1.24E-04	1.13E-06	1.13E-06	1.13E-06	1.13E-06	4.22E-05	1.04E-08	
Germanium (32)	Ge-69	1.55E+02	4.46E-03	9.66E-07	7.70E-07	1.08E-06	5.55E+00	1.06E+00	3.04E+00	4.82E+00	1.05E+00	5.11E-03	
Germanium (32)	Ge-71	2.21E+01	3.13E-02	5.85E-08	4.37E-08	5.33E-08	1.15E-06	1.15E-06	1.15E-06	1.15E-06	4.28E-05	1.05E-08	
Germanium (32)	Ge-75	4.40E+03	1.57E-04	2.29E-07	1.71E-07	1.66E-07	1.82E-01	4.32E-02	1.17E-01	1.72E-01	8.53E-02	2.14E-04	
Germanium (32)	Ge-77	5.37E+02	1.29E-03	1.56E-06	1.21E-06	1.67E-06	6.01E+00	1.22E+00	3.46E+00	5.36E+00	1.26E+00	5.78E-03	
Germanium (32)	Ge-78	4.14E+03	1.67E-04	5.44E-07	4.22E-07	4.26E-07	1.40E+00	3.12E-01	8.91E-01	1.32E+00	3.11E-01	1.44E-03	
Hydrogen (1)	H-3	5.63E-02	1.23E+01	1.69E-07	1.55E-07	1.07E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Hafnium (72)	Hf-167	1.78E+05	3.90E-06	0.00E+00	0.00E+00	0.00E+00	3.21E+00	7.02E-01	1.96E+00	2.95E+00	7.47E-01	3.19E-03	
Hafnium (72)	Hf-169	1.12E+05	6.16E-06	0.00E+00	0.00E+00	0.00E+00	3.31E+00	7.12E-01	1.98E+00	3.03E+00	7.27E-01	3.25E-03	
Hafnium (72)	Hf-170	3.79E+02	1.83E-03	1.96E-06	1.53E-06	1.26E-06	2.05E+00	4.69E-01	1.27E+00	1.89E+00	4.78E-01	2.14E-03	
Hafnium (72)	Hf-172	3.71E-01	1.87E+00	5.40E-06	3.92E-06	1.01E-04	2.00E-01	8.35E-02	1.72E-01	2.00E-01	1.04E-01	3.61E-04	
Hafnium (72)	Hf-173	2.57E+02	2.69E-03	1.07E-06	8.29E-07	7.51E-07	1.65E+00	4.17E-01	1.11E+00	1.57E+00	4.24E-01	1.89E-03	
Hafnium (72)	Hf-174	3.47E-16	2.00E+15	1.17E-03	9.44E-04	1.96E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Hafnium (72)	Hf-175	3.61E+00	1.92E-01	1.95E-06	1.49E-06	5.74E-06	1.63E+00	3.79E-01	1.04E+00	1.53E+00	3.85E-01	1.72E-03	
Hafnium (72)	Hf-177m	7.09E+03	9.78E-05	4.00E-07	3.08E-07	4.11E-07	1.10E+01	2.52E+00	7.04E+00	1.04E+01	2.49E+00	1.15E-02	
Hafnium (72)	Hf-178m	2.24E-02	3.10E+01	1.84E-05	1.47E-05	8.51E-04	1.15E+01	2.50E+00	7.04E+00	1.06E+01	2.47E+00	1.14E-02	
Hafnium (72)	Hf-179m	1.01E+01	6.86E-02	6.22E-06	4.70E-06	1.81E-05	4.43E+00	1.01E+00	2.80E+00	4.13E+00	1.01E+00	4.58E-03	
Hafnium (72)	Hf-180m	1.10E+03	6.28E-04	8.18E-07	6.33E-07	6.18E-07	4.91E+00	1.09E+00	3.06E+00	4.58E+00	1.09E+00	4.99E-03	
Hafnium (72)	Hf-181	5.97E+00	1.16E-01	5.55E-06	4.11E-06	2.41E-05	2.71E+00	5.92E-01	1.66E+00	2.50E+00	5.87E-01	2.71E-03	

Dose Conversion Factors October 2024												
Radionuclides		Isotope-specific Information and Dose Conversion Factors										
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)		
Hafnium (72)	Hf-182	7.70E-08	9.00E+06	1.27E-05	1.05E-05	1.12E-03	1.15E+00	2.65E-01	7.47E-01	1.10E+00	2.61E-01	1.21E-03
Hafnium (72)	Hf-182m	5.92E+03	1.17E-04	2.20E-07	1.69E-07	2.26E-07	4.69E+00	1.00E+00	2.82E+00	4.26E+00	1.00E+00	4.66E-03
Hafnium (72)	Hf-183	5.69E+03	1.22E-04	3.65E-07	2.75E-07	2.70E-07	4.28E+00	8.65E-01	2.45E+00	3.79E+00	9.04E-01	4.09E-03
Hafnium (72)	Hf-184	1.47E+03	4.70E-04	2.61E-06	1.94E-06	1.51E-06	1.03E+00	2.50E-01	6.84E-01	9.79E-01	2.76E-01	1.15E-03
Mercury (80)	Hg-190	1.82E+04	3.81E-05	1.03E-07	8.07E-08	3.08E-07	6.82E-01	2.00E-01	5.10E-01	6.69E-01	2.07E-01	9.04E-04
Mercury (80)	Hg-191m	7.17E+03	9.67E-05	2.55E-07	1.99E-07	1.28E-06	8.22E+00	1.64E+00	4.65E+00	7.23E+00	1.61E+00	7.86E-03
Mercury (80)	Hg-192	1.25E+03	5.54E-04	1.08E-06	8.40E-07	4.00E-06	1.11E+00	2.84E-01	7.60E-01	1.07E+00	2.89E-01	1.28E-03
Mercury (80)	Hg-193	1.60E+03	4.34E-04	5.14E-07	4.00E-07	3.49E-06	4.69E+00	9.06E-01	2.56E+00	4.03E+00	8.94E-01	4.45E-03
Mercury (80)	Hg-193m	5.14E+02	1.35E-03	2.08E-06	1.60E-06	1.20E-05	5.79E+00	1.12E+00	3.19E+00	5.02E+00	1.11E+00	5.45E-03
Mercury (80)	Hg-194	1.58E-03	4.40E+02	5.77E-06	5.14E-06	9.10E-05	7.68E-06	7.68E-06	7.68E-06	7.68E-06	1.89E-04	5.24E-08
Mercury (80)	Hg-195	5.77E+02	1.20E-03	5.07E-07	3.81E-07	6.03E-06	9.06E-01	2.05E-01	5.51E-01	8.11E-01	2.12E-01	9.61E-04
Mercury (80)	Hg-195m	1.46E+02	4.75E-03	2.76E-06	2.05E-06	3.26E-05	9.21E-01	2.13E-01	5.85E-01	8.56E-01	2.14E-01	9.77E-04
Mercury (80)	Hg-197	9.35E+01	7.41E-03	1.25E-06	9.25E-07	1.87E-05	1.59E-01	6.33E-02	1.38E-01	1.59E-01	7.12E-02	2.79E-04
Mercury (80)	Hg-197m	2.55E+02	2.72E-03	2.43E-06	1.78E-06	2.36E-05	3.34E-01	9.56E-02	2.47E-01	3.27E-01	9.80E-02	4.38E-04
Mercury (80)	Hg-199m	8.54E+03	8.12E-05	1.52E-07	1.14E-07	7.07E-07	7.25E-01	1.91E-01	5.04E-01	6.99E-01	1.92E-01	8.79E-04
Mercury (80)	Hg-203	5.43E+00	1.28E-01	2.68E-06	1.99E-06	2.85E-05	1.17E+00	2.65E-01	7.49E-01	1.10E+00	2.60E-01	1.21E-03
Mercury (80)	Hg-205	7.00E+04	9.89E-06	0.00E+00	0.00E+00	0.00E+00	3.62E-02	1.32E-02	2.62E-02	3.49E-02	7.67E-02	7.23E-05
Mercury (80)	Hg-206	4.47E+04	1.55E-05	0.00E+00	0.00E+00	0.00E+00	6.13E-01	1.39E-01	3.87E-01	5.73E-01	1.74E-01	6.49E-04
Mercury (80)	Hg-207	1.26E+05	5.52E-06	0.00E+00	0.00E+00	0.00E+00	1.64E+01	2.91E+00	8.41E+00	8.41E+00	2.91E+00	1.49E-02
Holmium (67)	Ho-150	2.85E+05	2.44E-06	0.00E+00	0.00E+00	0.00E+00	1.08E+01	2.20E+00	6.22E+00	9.64E+00	2.30E+00	1.02E-02
Holmium (67)	Ho-153	1.81E+05	3.82E-06	0.00E+00	0.00E+00	0.00E+00	5.59E+00	1.16E+00	3.27E+00	5.02E+00	1.20E+00	5.38E-03
Holmium (67)	Ho-153m	3.92E+04	1.77E-05	0.00E+00	0.00E+00	0.00E+00	5.64E+00	1.20E+00	3.36E+00	5.12E+00	1.25E+00	5.51E-03
Holmium (67)	Ho-154	3.10E+04	2.24E-05	2.00E-07	1.51E-07	6.73E-08	1.06E+01	2.15E+00	6.07E+00	9.43E+00	2.20E+00	1.01E-02
Holmium (67)	Ho-154m	1.17E+05	5.90E-06	0.00E+00	0.00E+00	0.00E+00	1.34E+01	2.75E+00	7.83E+00	1.20E+01	2.77E+00	1.27E-02
Holmium (67)	Ho-155	7.59E+03	9.13E-05	1.90E-07	1.46E-07	1.06E-07	3.23E+00	6.67E-01	1.86E+00	2.88E+00	6.89E-01	3.16E-03
Holmium (67)	Ho-156	6.50E+03	1.07E-04	4.70E-07	3.60E-07	2.43E-07	1.22E+01	2.34E+00	6.63E+00	1.05E+01	2.34E+00	1.14E-02
Holmium (67)	Ho-157	2.89E+04	2.40E-05	3.45E-08	2.70E-08	2.17E-08	2.84E+00	6.18E-01	1.70E+00	2.58E+00	6.37E-01	2.87E-03
Holmium (67)	Ho-159	1.10E+04	6.29E-05	4.03E-08	3.17E-08	2.94E-08	1.58E+00	3.90E-01	1.03E+00	1.48E+00	4.11E-01	1.77E-03
Holmium (67)	Ho-160	1.42E+04	4.87E-05	7.88E-08	6.33E-08	6.03E-08	9.56E+00	1.87E+00	5.34E+00	8.37E+00	1.86E+00	8.92E-03
Holmium (67)	Ho-161	2.45E+03	2.83E-04	6.33E-08	4.66E-08	3.32E-08	7.32E-02	3.70E-02	6.58E-02	7.29E-02	5.66E-02	1.55E-04
Holmium (67)	Ho-162	2.43E+04	2.85E-05	1.57E-08	1.20E-08	1.27E-08	7.38E-01	1.61E-01	4.24E-01	6.43E-01	1.77E-01	7.64E-04
Holmium (67)	Ho-162m	5.44E+03	1.27E-04	1.21E-07	9.40E-08	9.29E-08	3.01E+00	5.98E-01	1.67E+00	2.62E+00	6.02E-01	2.90E-03
Holmium (67)	Ho-163	1.52E-04	4.57E+03	1.48E-08	1.07E-08	1.04E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Holmium (67)	Ho-164	1.26E+04	5.52E-05	4.70E-08	3.50E-08	3.77E-08	3.81E-02	2.09E-02	3.59E-02	3.81E-02	3.93E-02	9.39E-05
Holmium (67)	Ho-164m	9.59E+03	7.23E-05	8.25E-08	6.14E-08	5.00E-08	5.01E-02	2.99E-02	4.86E-02	5.01E-02	4.51E-02	1.24E-04
Holmium (67)	Ho-166	2.27E+02	3.06E-03	7.14E-06	5.18E-06	3.12E-06	1.59E-01	4.18E-02	9.47E-02	1.38E-01	1.24E-01	2.04E-04
Holmium (67)	Ho-166m	5.78E-04	1.20E+03	9.44E-06	7.29E-06	1.10E-03	8.97E+00	1.82E+00	5.17E+00	8.00E+00	1.79E+00	8.51E-03
Holmium (67)	Ho-167	1.96E+03	3.54E-04	4.33E-07	3.23E-07	3.37E-07	1.84E+00	4.07E-01	1.15E+00	1.72E+00	4.11E-01	1.87E-03
Holmium (67)	Ho-168	1.22E+05	5.69E-06	0.00E+00	0.00E+00	0.00E+00	5.06E+00	9.94E-01	2.82E+00	4.43E+00	1.07E+00	4.74E-03
Holmium (67)	Ho-168m	1.66E+05	4.19E-06	0.00E+00	0.00E+00	0.00E+00	7.08E-03	4.24E-03	6.89E-03	7.08E-03	6.34E-03	1.75E-05
Holmium (67)	Ho-170	1.32E+05	5.25E-06	0.00E+00	0.00E+00	0.00E+00	1.32E+00	1.91E+00	5.42E+00	8.48E+00	1.96E+00	9.14E-03
Iodine (53)	I-118	2.66E+04	2.61E-05	1.02E-06	7.22E-07	7.51E-07	1.17E+01	2.35E+00	6.61E+00	1.03E+01	2.43E+00	1.10E-02
Iodine (53)	I-118m	4.29E+04	1.62E-05	0.00E+00	0.00E+00	0.00E+00	2.15E+01	4.26E+00	1.21E+01	1.91E+01	4.29E+00	2.00E-02
Iodine (53)	I-119	1.91E+04	3.63E-05	2.13E-07	1.57E-07	2.09E-07	4.88E+00	1.03E+00	2.91E+00	4.45E+00	1.08E+00	4.74E-03
Iodine (53)	I-120	4.46E+03	1.55E-04	1.52E-06	1.08E-06	1.20E-06	1.63E+01	2.93E+00	8.44E+00	1.36E+01	2.95E+00	1.49E-02
Iodine (53)	I-120m	6.87E+03	1.01E-04	7.77E-07	5.74E-07	5.99E-07	2.05E+01	3.94E+00	1.13E+01	1.79E+01	3.96E+00	1.90E-02
Iodine (53)	I-121	2.86E+03	2.42E-04	3.70E-07	2.81E-07	3.55E-07	1.96E+00	4.30E-01	1.21E+00	1.81E+00	4.38E-01	1.97E-03
Iodine (53)	I-122	1.00E+05	6.91E-06	0.00E+00	0.00E+00	0.00E+00	5.36E+00	1.12E+00	3.14E+00	4.84E+00	1.22E+00	5.13E-03
Iodine (53)	I-123	4.57E+02	1.51E-03	1.20E-06	8.18E-07	1.05E-06	6.56E-01	1.68E-01	4.54E-01	6.35E-01	1.80E-01	7.65E-04
Iodine (53)	I-124	6.06E+01	1.14E-02	7.03E-05	4.85E-05	5.81E-05	6.46E+00	1.23E+00	3.51E+00	5.59E+00	1.23E+00	5.97E-03
Iodine (53)	I-125	4.26E+00	1.63E-01	6.99E-05	5.74E-05	6.11E-05	1.20E-02	1.11E-02	1.20E-02	1.20E-02	3.73E-02	4.41E-05

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Iodine (53)	I-126	1.96E+01	3.54E-02	1.51E-04	1.08E-04	1.27E-04	2.35E+00	4.84E-01	1.37E+00	2.13E+00	4.94E-01	2.24E-03	
Iodine (53)	I-128	1.46E+04	4.75E-05	2.31E-07	1.69E-07	2.69E-07	3.87E-01	9.15E-02	2.35E-01	3.53E-01	1.80E-01	4.15E-04	
Iodine (53)	I-129	4.41E-08	1.57E+07	4.48E-04	4.00E-04	4.00E-04	9.69E-03	8.35E-03	9.69E-03	9.69E-03	2.33E-02	3.34E-05	
Iodine (53)	I-130	4.91E+02	1.41E-03	1.02E-05	6.92E-06	8.73E-06	1.21E+01	2.41E+00	6.91E+00	1.08E+01	2.40E+00	1.13E-02	
Iodine (53)	I-130m	4.12E+04	1.68E-05	0.00E+00	0.00E+00	0.00E+00	5.96E-01	1.23E-01	3.44E-01	5.31E-01	1.40E-01	5.70E-04	
Iodine (53)	I-131	3.15E+01	2.20E-02	1.16E-04	8.03E-05	9.66E-05	2.02E+00	4.32E-01	1.23E+00	1.86E+00	4.27E-01	1.98E-03	
Iodine (53)	I-132	2.65E+03	2.62E-04	1.50E-06	1.05E-06	1.43E-06	1.32E+01	2.54E+00	7.30E+00	1.15E+01	2.55E+00	1.21E-02	
Iodine (53)	I-132m	4.38E+03	1.58E-04	1.07E-06	7.33E-07	1.10E-06	1.85E+00	3.75E-01	1.07E+00	1.66E+00	3.82E-01	1.75E-03	
Iodine (53)	I-133	2.92E+02	2.37E-03	2.44E-05	1.60E-05	2.03E-05	3.44E+00	6.95E-01	1.98E+00	3.08E+00	7.27E-01	3.25E-03	
Iodine (53)	I-134	6.94E+03	9.99E-05	5.07E-07	3.74E-07	5.99E-07	1.53E+01	2.90E+00	8.33E+00	1.32E+01	2.91E+00	1.41E-02	
Iodine (53)	I-134m	1.01E+05	6.85E-06	0.00E+00	0.00E+00	0.00E+00	1.35E+00	3.03E-01	8.46E-01	1.26E+00	3.14E-01	1.39E-03	
Iodine (53)	I-135	9.24E+02	7.50E-04	4.85E-06	3.27E-06	4.29E-06	9.77E+00	1.73E+00	5.02E+00	8.14E+00	1.72E+00	8.84E-03	
Indium (49)	In-103	3.64E+05	1.90E-06	0.00E+00	0.00E+00	0.00E+00	1.64E+01	3.08E+00	8.80E+00	1.40E+01	3.12E+00	1.52E-02	
Indium (49)	In-105	7.18E+04	9.65E-06	0.00E+00	0.00E+00	0.00E+00	1.12E+01	2.17E+00	6.18E+00	9.69E+00	2.22E+00	1.05E-02	
Indium (49)	In-106	5.87E+04	1.18E-05	0.00E+00	0.00E+00	0.00E+00	2.05E+01	4.03E+00	1.15E+01	1.80E+01	4.06E+00	1.90E-02	
Indium (49)	In-106m	7.00E+04	9.89E-06	0.00E+00	0.00E+00	0.00E+00	1.71E+01	3.16E+00	9.02E+00	1.45E+01	3.19E+00	1.58E-02	
Indium (49)	In-107	1.12E+04	6.16E-05	1.96E-07	1.50E-07	1.13E-07	9.06E+00	1.67E+00	4.82E+00	7.70E+00	1.67E+00	8.38E-03	
Indium (49)	In-108	6.28E+03	1.10E-04	3.60E-07	2.89E-07	2.11E-07	2.30E+01	4.35E+00	1.25E+01	1.98E+01	4.28E+00	2.11E-02	
Indium (49)	In-108m	9.20E+03	7.53E-05	3.92E-07	3.00E-07	1.68E-07	1.73E+01	2.97E+00	8.63E+00	1.41E+01	2.95E+00	1.58E-02	
Indium (49)	In-109	1.45E+03	4.79E-04	2.76E-07	2.18E-07	1.74E-07	3.49E+00	6.99E-01	2.00E+00	3.08E+00	6.94E-01	3.34E-03	
Indium (49)	In-109m	2.72E+05	2.55E-06	0.00E+00	0.00E+00	0.00E+00	3.44E+00	6.87E-01	1.96E+00	3.06E+00	6.85E-01	3.20E-03	
Indium (49)	In-110	1.24E+03	5.59E-04	1.12E-06	9.07E-07	6.07E-07	1.79E+01	3.46E+00	9.92E+00	1.57E+01	3.41E+00	1.65E-02	
Indium (49)	In-110m	5.27E+03	1.31E-04	4.96E-07	3.77E-07	2.22E-07	9.10E+00	1.77E+00	5.06E+00	7.96E+00	1.81E+00	8.48E-03	
Indium (49)	In-111	9.02E+01	7.68E-03	1.40E-06	1.08E-06	1.06E-06	1.81E+00	4.32E-01	1.21E+00	1.74E+00	4.31E-01	1.97E-03	
Indium (49)	In-111m	4.73E+04	1.46E-05	0.00E+00	0.00E+00	0.00E+00	2.60E+00	5.32E-01	1.52E+00	2.34E+00	5.33E-01	2.45E-03	
Indium (49)	In-112	2.43E+04	2.85E-05	5.18E-08	3.89E-08	3.49E-08	1.45E+00	3.01E-01	8.50E-01	1.31E+00	3.20E-01	1.39E-03	
Indium (49)	In-112m	1.77E+04	3.91E-05	8.44E-08	6.29E-08	9.62E-08	8.89E-02	2.47E-02	6.35E-02	8.72E-02	3.27E-02	1.15E-04	
Indium (49)	In-113m	3.66E+03	1.89E-04	1.45E-07	1.07E-07	9.25E-08	1.35E+00	2.90E-01	8.22E-01	1.25E+00	2.88E-01	1.32E-03	
Indium (49)	In-114	3.04E+05	2.28E-06	0.00E+00	0.00E+00	0.00E+00	4.05E-02	1.87E-02	2.93E-02	3.75E-02	1.13E-01	8.49E-05	
Indium (49)	In-114m	5.11E+00	1.36E-01	2.15E-05	1.53E-05	5.55E-05	3.72E-01	8.13E-02	2.28E-01	3.42E-01	8.51E-02	3.81E-04	
Indium (49)	In-115	1.57E-15	4.41E+14	1.31E-04	1.21E-04	1.51E-03	3.61E-04	1.32E-04	2.88E-04	3.57E-04	4.37E-04	7.71E-06	
Indium (49)	In-115m	1.35E+03	5.12E-04	4.40E-07	3.25E-07	2.74E-07	8.00E-01	1.76E-01	4.99E-01	7.49E-01	1.78E-01	8.10E-04	
Indium (49)	In-116m	6.69E+03	1.04E-04	3.05E-07	2.38E-07	2.09E-07	1.52E+01	2.71E+00	7.85E+00	1.27E+01	2.65E+00	1.38E-02	
Indium (49)	In-117	8.43E+03	8.22E-05	1.48E-07	1.13E-07	1.31E-07	3.66E+00	7.79E-01	2.20E+00	3.34E+00	7.77E-01	3.60E-03	
Indium (49)	In-117m	3.13E+03	2.21E-04	6.22E-07	4.59E-07	3.31E-07	4.30E-01	1.03E-01	2.80E-01	4.07E-01	1.46E-01	4.76E-04	
Indium (49)	In-118	4.37E+06	1.59E-07	0.00E+00	0.00E+00	0.00E+00	6.28E-01	1.60E-01	3.61E-01	5.44E-01	2.95E-01	6.68E-04	
Indium (49)	In-118m	8.35E+04	8.30E-06	0.00E+00	0.00E+00	0.00E+00	1.68E+01	3.08E+00	8.89E+00	1.42E+01	3.10E+00	1.53E-02	
Indium (49)	In-119	1.52E+05	4.57E-06	0.00E+00	0.00E+00	0.00E+00	4.43E+00	8.72E-01	2.48E+00	3.90E+00	9.34E-01	4.13E-03	
Indium (49)	In-119m	2.02E+04	3.42E-05	2.29E-07	1.70E-07	8.10E-08	4.30E-01	9.92E-02	2.45E-01	3.74E-01	2.07E-01	4.54E-04	
Indium (49)	In-121	9.46E+05	7.32E-07	0.00E+00	0.00E+00	0.00E+00	5.47E+00	1.06E+00	3.01E+00	4.76E+00	1.16E+00	5.09E-03	
Indium (49)	In-121m	9.39E+04	7.38E-06	0.00E+00	0.00E+00	0.00E+00	3.79E-01	1.11E-01	2.30E-01	3.31E-01	2.48E-01	4.58E-04	
Iridium (77)	Ir-180	2.43E+05	2.85E-06	0.00E+00	0.00E+00	0.00E+00	8.78E+00	1.83E+00	5.14E+00	7.88E+00	1.89E+00	8.45E-03	
Iridium (77)	Ir-182	2.43E+04	2.85E-05	2.57E-07	1.94E-07	1.14E-07	7.75E+00	1.61E+00	4.52E+00	6.93E+00	1.66E+00	7.50E-03	
Iridium (77)	Ir-183	6.28E+03	1.10E-04	2.52E-07	1.97E-07	1.74E-07	6.80E+00	1.29E+00	3.66E+00	5.77E+00	1.27E+00	6.40E-03	
Iridium (77)	Ir-184	1.96E+03	3.53E-04	9.03E-07	6.96E-07	5.51E-07	1.12E+01	2.17E+00	6.16E+00	9.68E+00	2.15E+00	1.05E-02	
Iridium (77)	Ir-185	4.22E+02	1.64E-03	1.58E-06	1.21E-06	1.02E-06	4.89E+00	9.08E-01	2.58E+00	4.09E+00	8.97E-01	4.61E-03	
Iridium (77)	Ir-186	3.65E+02	1.90E-03	2.69E-06	2.09E-06	1.56E-06	9.40E+00	1.82E+00	5.19E+00	8.13E+00	1.79E+00	8.91E-03	
Iridium (77)	Ir-186m	3.16E+03	2.19E-04	3.47E-07	2.72E-07	2.21E-07	7.29E+00	1.37E+00	3.90E+00	6.20E+00	1.34E+00	6.78E-03	
Iridium (77)	Ir-187	5.78E+02	1.20E-03	5.62E-07	4.29E-07	3.37E-07	1.62E+00	3.51E-01	9.60E-01	1.44E+00	3.58E-01	1.63E-03	
Iridium (77)	Ir-188	1.46E+02	4.74E-03	3.56E-06	2.83E-06	2.11E-06	1.30E+01	2.24E+00	6.48E+00	1.06E+01	2.17E+00	1.18E-02	
Iridium (77)	Ir-189	1.92E+01	3.62E-02	1.21E-06	8.99E-07	2.32E-06	2.07E-01	7.04E-02	1.62E-01	2.04E-01	7.88E-02	3.12E-04	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Iridium (77)	Ir-190	2.15E+01	3.23E-02	5.03E-06	3.96E-06	5.77E-06	7.83E+00	1.65E+00	4.67E+00	7.12E+00	1.64E+00	7.60E-03	
Iridium (77)	Ir-190m	5.42E+03	1.28E-04	3.40E-08	2.59E-08	2.58E-08	1.69E-06	1.69E-06	1.69E-06	1.69E-06	5.18E-05	1.33E-08	
Iridium (77)	Ir-190n	1.97E+03	3.52E-04	5.59E-07	4.37E-07	3.67E-07	1.20E-01	4.86E-02	1.03E-01	1.19E-01	5.69E-02	2.13E-04	
Iridium (77)	Ir-191m	4.42E+06	1.57E-07	0.00E+00	0.00E+00	0.00E+00	2.07E-01	6.95E-02	1.66E-01	2.05E-01	7.48E-02	3.11E-04	
Iridium (77)	Ir-192	3.43E+00	2.02E-01	6.73E-06	5.07E-06	2.70E-05	4.28E+00	9.21E-01	2.62E+00	3.96E+00	9.06E-01	4.22E-03	
Iridium (77)	Ir-192m	2.51E+05	2.76E-06	0.00E+00	0.00E+00	0.00E+00	2.32E-04	6.50E-05	1.57E-04	2.19E-04	2.49E-04	3.13E-07	
Iridium (77)	Ir-192n	2.88E-03	2.41E+02	4.59E-06	3.39E-06	2.26E-04	1.53E-03	5.64E-04	1.26E-03	1.52E-03	9.92E-04	7.76E-06	
Iridium (77)	Ir-193m	2.40E+01	2.88E-02	1.48E-06	1.07E-06	5.00E-06	6.15E-04	2.67E-04	5.53E-04	6.15E-04	3.72E-04	1.21E-06	
Iridium (77)	Ir-194	3.15E+02	2.20E-03	6.81E-06	4.92E-06	2.50E-06	5.29E-01	1.20E-01	3.16E-01	4.78E-01	2.12E-01	5.57E-04	
Iridium (77)	Ir-194m	1.48E+00	4.68E-01	9.73E-06	7.62E-06	4.92E-05	1.27E+01	2.63E+00	7.53E+00	1.15E+01	2.60E+00	1.21E-02	
Iridium (77)	Ir-195	2.43E+03	2.85E-04	5.11E-07	3.74E-07	3.08E-07	1.48E-01	5.44E-02	1.22E-01	1.47E-01	8.63E-02	2.57E-04	
Iridium (77)	Ir-195m	1.60E+03	4.34E-04	6.77E-07	5.03E-07	5.44E-07	1.87E+00	4.15E-01	1.16E+00	1.73E+00	4.21E-01	1.90E-03	
Iridium (77)	Ir-196	4.20E+05	1.65E-06	0.00E+00	0.00E+00	0.00E+00	1.36E+00	2.95E-01	7.96E-01	1.22E+00	4.07E-01	1.35E-03	
Iridium (77)	Ir-196m	4.34E+03	1.60E-04	5.29E-07	4.11E-07	4.00E-07	1.34E+01	2.78E+00	7.94E+00	1.22E+01	2.76E+00	1.28E-02	
Potassium (19)	K-38	4.77E+04	1.45E-05	0.00E+00	0.00E+00	0.00E+00	2.00E+01	3.47E+00	1.00E+01	1.64E+01	3.47E+00	1.82E-02	
Potassium (19)	K-40	5.54E-10	1.25E+09	3.04E-05	2.28E-05	3.28E-04	9.98E-01	1.78E-01	5.06E-01	8.22E-01	2.38E-01	9.27E-04	
Potassium (19)	K-42	4.91E+02	1.41E-03	2.18E-06	1.62E-06	1.51E-06	1.86E+00	3.51E-01	9.53E-01	1.53E+00	4.68E-01	1.74E-03	
Potassium (19)	K-43	2.72E+02	2.55E-03	1.18E-06	9.21E-07	1.60E-06	5.29E+00	1.09E+00	3.12E+00	4.80E+00	1.09E+00	5.06E-03	
Potassium (19)	K-44	1.65E+04	4.21E-05	4.11E-07	3.09E-07	1.48E-07	1.54E+01	2.60E-01	7.51E+00	1.24E+01	2.61E+00	1.39E-02	
Potassium (19)	K-45	2.11E+04	3.29E-05	2.40E-07	1.81E-07	9.73E-08	1.16E+01	2.00E+00	5.77E+00	9.43E+00	2.03E+00	1.06E-02	
Potassium (19)	K-46	2.08E+05	3.33E-06	0.00E+00	0.00E+00	0.00E+00	1.91E+01	3.10E+00	8.99E+00	1.50E+01	3.11E+00	1.72E-02	
Krypton (36)	Kr-74	3.17E+04	2.19E-05	0.00E+00	0.00E+00	0.00E+00	5.59E+00	1.20E+00	3.36E+00	5.12E+00	1.25E+00	5.49E-03	
Krypton (36)	Kr-75	8.49E+04	8.16E-06	0.00E+00	0.00E+00	0.00E+00	7.01E+00	1.49E+00	4.17E+00	6.33E+00	1.60E+00	6.83E-03	
Krypton (36)	Kr-76	4.10E+02	1.69E-03	0.00E+00	0.00E+00	0.00E+00	2.15E+00	4.69E-01	1.33E+00	2.00E+00	4.63E-01	2.14E-03	
Krypton (36)	Kr-77	4.90E+03	1.42E-04	0.00E+00	0.00E+00	0.00E+00	5.47E+00	1.18E+00	3.33E+00	5.01E+00	1.24E+00	5.41E-03	
Krypton (36)	Kr-79	1.73E+02	4.00E-03	0.00E+00	0.00E+00	0.00E+00	1.35E+00	2.80E-01	8.01E-01	1.23E+00	2.77E-01	1.30E-03	
Krypton (36)	Kr-81	3.03E-06	2.29E+05	0.00E+00	0.00E+00	0.00E+00	4.15E-03	9.58E-04	2.67E-03	3.92E-03	1.84E-03	4.46E-06	
Krypton (36)	Kr-81m	1.67E+06	4.15E-07	0.00E+00	0.00E+00	0.00E+00	5.85E-01	1.42E-01	3.96E-01	5.66E-01	1.38E-01	6.50E-04	
Krypton (36)	Kr-83m	3.32E+03	2.09E-04	0.00E+00	0.00E+00	0.00E+00	2.34E-05	2.24E-05	2.34E-05	2.34E-05	3.81E-04	1.28E-07	
Krypton (36)	Kr-85	6.44E-02	1.08E+01	0.00E+00	0.00E+00	0.00E+00	1.36E-02	3.12E-03	8.29E-03	1.25E-02	1.23E-02	2.81E-05	
Krypton (36)	Kr-85m	1.36E+03	5.11E-04	0.00E+00	0.00E+00	0.00E+00	6.93E-01	1.73E-01	4.76E-01	6.72E-01	1.82E-01	8.00E-04	
Krypton (36)	Kr-87	4.77E+03	1.45E-04	0.00E+00	0.00E+00	0.00E+00	5.01E+00	8.95E-01	2.54E+00	4.11E+00	9.80E-01	4.64E-03	
Krypton (36)	Kr-88	2.14E+03	3.24E-04	0.00E+00	0.00E+00	0.00E+00	1.26E+01	2.07E+00	6.07E+00	1.01E+01	2.01E+00	1.13E-02	
Krypton (36)	Kr-89	1.16E+05	5.99E-06	0.00E+00	0.00E+00	0.00E+00	1.22E+01	2.11E+00	6.09E+00	9.96E+00	2.15E+00	1.12E-02	
Lanthanum (57)	La-128	7.03E+04	9.86E-06	0.00E+00	0.00E+00	0.00E+00	1.62E+01	3.21E+00	9.13E+00	1.43E+01	3.26E+00	1.52E-02	
Lanthanum (57)	La-129	3.14E+04	2.21E-05	1.31E-07	9.88E-08	5.48E-08	4.95E+00	1.04E+00	2.93E+00	4.50E+00	1.10E+00	4.80E-03	
Lanthanum (57)	La-130	4.19E+04	1.66E-05	0.00E+00	0.00E+00	0.00E+00	1.29E+01	2.52E+00	7.19E+00	1.13E+01	2.57E+00	1.20E-02	
Lanthanum (57)	La-131	6.17E+03	1.12E-04	1.62E-07	1.24E-07	1.04E-07	3.44E+00	7.29E-01	2.05E+00	3.12E+00	7.53E-01	3.36E-03	
Lanthanum (57)	La-132	1.26E+03	5.48E-04	2.00E-06	1.51E-06	8.10E-07	1.18E+01	2.20E+00	6.33E+00	1.01E+01	2.21E+00	1.09E-02	
Lanthanum (57)	La-132m	1.50E+04	4.62E-05	1.79E-07	1.36E-07	9.29E-08	3.57E+00	7.40E-01	2.09E+00	3.19E+00	7.43E-01	3.44E-03	
Lanthanum (57)	La-133	1.55E+03	4.47E-04	1.56E-07	1.18E-07	7.70E-08	7.58E-01	1.62E-01	4.48E-01	6.86E-01	1.77E-01	7.46E-04	
Lanthanum (57)	La-134	5.65E+04	1.23E-05	0.00E+00	0.00E+00	0.00E+00	3.98E+00	8.29E-01	2.34E+00	3.59E+00	9.04E-01	3.81E-03	
Lanthanum (57)	La-135	3.11E+02	2.23E-03	1.52E-07	1.15E-07	6.81E-08	6.71E-02	2.09E-02	4.39E-02	6.16E-02	3.57E-02	9.03E-05	
Lanthanum (57)	La-136	3.69E+04	1.88E-05	0.00E+00	0.00E+00	0.00E+00	2.17E+00	4.54E-01	1.28E+00	1.96E+00	4.93E-01	2.09E-03	
Lanthanum (57)	La-137	1.16E-05	6.00E+04	4.11E-07	3.11E-07	3.49E-05	1.07E-02	9.04E-03	1.07E-02	1.07E-02	2.35E-02	3.58E-05	
Lanthanum (57)	La-138	6.79E-12	1.02E+11	5.07E-06	4.03E-06	5.99E-04	7.53E+00	1.34E+00	3.89E+00	6.28E+00	1.31E+00	6.80E-03	
Lanthanum (57)	La-140	1.51E+02	4.60E-03	9.88E-06	7.44E-06	5.00E-06	1.43E+01	2.52E+00	7.32E+00	1.19E+01	2.51E+00	1.30E-02	
Lanthanum (57)	La-141	1.55E+03	4.47E-04	1.89E-06	1.37E-06	7.14E-07	2.13E-01	5.51E-02	1.21E-01	1.81E-01	1.64E-01	2.50E-04	
Lanthanum (57)	La-142	4.00E+03	1.73E-04	8.55E-07	6.48E-07	3.96E-07	1.54E+01	2.54E+00	7.40E+00	1.23E+01	2.53E+00	1.39E-02	
Lanthanum (57)	La-143	2.57E+04	2.70E-05	2.78E-07	2.06E-07	1.00E-07	1.72E+00	3.29E-01	8.91E-01	1.43E+00	4.40E-01	1.62E-03	
Lutetium (71)	Lu-165	3.39E+04	2.04E-05	1.05E-07	8.07E-08	6.03E-08	6.11E+00	1.21E+00	3.42E+00	5.31E+00	1.24E+00	5.86E-03	

Dose Conversion Factors October 2024												
Radionuclides		Isotope-specific Information and Dose Conversion Factors										
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)		
Lutetium (71)	Lu-167	7.07E+03	9.80E-05	2.27E-07	1.78E-07	1.69E-07	1.01E+01	1.82E+00	5.23E+00	8.41E+00	1.79E+00	9.27E-03
Lutetium (71)	Lu-169	1.78E+02	3.89E-03	2.50E-06	1.98E-06	1.91E-06	7.62E+00	1.42E+00	4.05E+00	6.46E+00	1.40E+00	7.09E-03
Lutetium (71)	Lu-169m	1.37E+05	5.07E-06	0.00E+00	0.00E+00	0.00E+00	3.72E-07	3.64E-07	3.72E-07	3.72E-07	1.10E-05	2.94E-09
Lutetium (71)	Lu-170	1.26E+02	5.51E-03	4.51E-06	3.59E-06	2.80E-06	1.61E+01	2.73E+00	7.90E+00	1.30E+01	2.64E+00	1.46E-02
Lutetium (71)	Lu-171	3.07E+01	2.26E-02	3.35E-06	2.56E-06	4.11E-06	3.36E+00	6.99E-01	1.94E+00	2.99E+00	7.10E-01	3.26E-03
Lutetium (71)	Lu-171m	2.77E+05	2.51E-06	0.00E+00	0.00E+00	0.00E+00	5.77E-04	2.65E-04	5.27E-04	5.77E-04	3.38E-04	1.15E-06
Lutetium (71)	Lu-172	3.78E+01	1.84E-02	6.25E-06	4.92E-06	6.66E-06	1.12E+01	2.15E+00	6.13E+00	9.69E+00	2.13E+00	1.05E-02
Lutetium (71)	Lu-172m	9.84E+04	7.04E-06	0.00E+00	0.00E+00	0.00E+00	1.39E-06	1.00E-06	1.38E-06	1.39E-06	5.32E-06	4.55E-09
Lutetium (71)	Lu-173	5.06E-01	1.37E+00	1.80E-06	1.35E-06	1.45E-05	5.75E-01	1.71E-01	4.09E-01	5.51E-01	1.92E-01	7.55E-04
Lutetium (71)	Lu-174	2.09E-01	3.31E+00	1.42E-06	1.05E-06	1.83E-05	4.71E-01	1.10E-01	2.76E-01	4.07E-01	1.20E-01	5.21E-04
Lutetium (71)	Lu-174m	1.78E+00	3.89E-01	2.76E-06	2.02E-06	1.80E-05	1.21E-01	4.80E-02	9.66E-02	1.15E-01	6.08E-02	2.08E-04
Lutetium (71)	Lu-176	1.80E-11	3.85E+10	8.95E-06	6.70E-06	5.96E-04	2.28E+00	5.27E-01	1.48E+00	2.17E+00	5.23E-01	2.42E-03
Lutetium (71)	Lu-176m	1.67E+03	4.15E-04	8.40E-07	6.11E-07	4.88E-07	3.96E-02	1.68E-02	3.36E-02	3.94E-02	6.57E-02	9.00E-05
Lutetium (71)	Lu-177	3.81E+01	1.82E-02	2.71E-06	1.97E-06	4.88E-06	1.45E-01	3.72E-02	1.01E-01	1.41E-01	3.75E-02	1.75E-04
Lutetium (71)	Lu-177m	1.58E+00	4.39E-01	8.40E-06	6.33E-06	6.51E-05	4.61E+00	1.09E+00	3.01E+00	4.37E+00	1.08E+00	4.94E-03
Lutetium (71)	Lu-178	1.28E+04	5.40E-05	2.31E-07	1.72E-07	1.09E-07	7.64E-01	1.51E-01	4.07E-01	6.44E-01	2.34E-01	7.52E-04
Lutetium (71)	Lu-178m	1.58E+04	4.39E-05	1.62E-07	1.24E-07	1.37E-07	5.12E+00	1.16E+00	3.23E+00	4.78E+00	1.18E+00	5.29E-03
Lutetium (71)	Lu-179	1.32E+03	5.24E-04	1.10E-06	7.99E-07	4.81E-07	1.50E-01	3.85E-02	1.00E-01	1.43E-01	9.31E-02	1.90E-04
Lutetium (71)	Lu-180	6.39E+04	1.08E-05	0.00E+00	0.00E+00	0.00E+00	8.93E+00	1.68E+00	4.80E+00	7.64E+00	1.71E+00	8.28E-03
Lutetium (71)	Lu-181	1.04E+05	6.66E-06	0.00E+00	0.00E+00	0.00E+00	3.06E+00	6.50E-01	1.81E+00	2.76E+00	7.35E-01	3.01E-03
Magnesium (12)	Mg-27	3.85E+04	1.80E-05	0.00E+00	0.00E+00	0.00E+00	5.25E+00	1.01E+00	2.88E+00	4.56E+00	1.08E+00	4.86E-03
Magnesium (12)	Mg-28	2.90E+02	2.39E-03	1.04E-05	7.99E-06	5.55E-06	8.16E+00	1.50E+00	4.32E+00	6.91E+00	1.47E+00	7.45E-03
Manganese (25)	Mn-50m	2.08E+05	3.33E-06	0.00E+00	0.00E+00	0.00E+00	2.76E+01	5.21E+00	1.49E+01	2.37E+01	5.23E+00	2.55E-02
Manganese (25)	Mn-51	7.88E+03	8.79E-05	4.55E-07	3.43E-07	1.91E-07	5.51E+00	1.15E+00	3.27E+00	5.01E+00	1.25E+00	5.28E-03
Manganese (25)	Mn-52	4.52E+01	1.53E-02	8.36E-06	6.70E-06	6.14E-06	2.07E+01	3.83E+00	1.11E+01	1.77E+01	3.75E+00	1.89E-02
Manganese (25)	Mn-52m	1.73E+04	4.01E-05	3.39E-07	2.57E-07	1.31E-07	1.44E+01	2.71E+00	7.75E+00	1.23E+01	2.76E+00	1.32E-02
Manganese (25)	Mn-53	1.87E-07	3.70E+06	1.53E-07	1.10E-07	1.35E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Manganese (25)	Mn-54	8.10E-01	8.55E-01	3.29E-06	2.67E-06	1.33E-05	4.86E+00	9.38E-01	2.69E+00	4.24E+00	9.22E-01	4.47E-03
Manganese (25)	Mn-56	2.35E+03	2.94E-04	1.26E-06	9.47E-07	5.70E-07	1.05E+01	1.87E+00	5.38E+00	8.72E+00	1.89E+00	9.54E-03
Manganese (25)	Mn-57	2.56E+05	2.71E-06	0.00E+00	0.00E+00	0.00E+00	5.73E-01	1.37E-01	3.44E-01	5.14E-01	2.54E-01	6.19E-04
Manganese (25)	Mn-58m	3.35E+05	2.07E-06	0.00E+00	0.00E+00	0.00E+00	1.46E+01	2.69E+00	7.70E+00	1.23E+01	2.76E+00	1.34E-02
Molybdenum (42)	Mo-101	2.49E+04	2.78E-05	1.97E-07	1.49E-07	1.14E-07	8.87E+00	1.63E+00	4.69E+00	7.51E+00	1.64E+00	8.14E-03
Molybdenum (42)	Mo-102	3.22E+04	2.15E-05	3.45E-07	2.56E-07	1.11E-07	8.78E-02	2.24E-02	6.00E-02	8.50E-02	5.16E-02	1.19E-04
Molybdenum (42)	Mo-89	1.73E+05	4.01E-06	0.00E+00	0.00E+00	0.00E+00	6.99E+00	1.45E+00	4.05E+00	6.26E+00	1.57E+00	6.66E-03
Molybdenum (42)	Mo-90	1.09E+03	6.35E-04	1.02E-06	8.14E-07	1.58E-06	4.33E+00	9.15E-01	2.60E+00	3.92E+00	9.15E-01	4.27E-03
Molybdenum (42)	Mo-91	2.35E+04	2.95E-05	2.97E-07	2.22E-07	9.18E-08	5.47E+00	1.16E+00	3.23E+00	4.95E+00	1.26E+00	5.25E-03
Molybdenum (42)	Mo-91m	3.38E+05	2.05E-06	0.00E+00	0.00E+00	0.00E+00	8.16E+00	1.56E+00	4.46E+00	7.06E+00	1.59E+00	7.53E-03
Molybdenum (42)	Mo-93	1.73E-04	4.00E+03	1.15E-05	1.07E-05	8.73E-06	4.09E-04	4.11E-04	4.09E-04	4.09E-04	4.48E-03	1.98E-06
Molybdenum (42)	Mo-93m	8.86E+02	7.82E-04	5.44E-07	4.44E-07	7.96E-07	1.40E+01	2.56E+00	7.38E+00	1.18E+01	2.49E+00	1.27E-02
Molybdenum (42)	Mo-99	9.21E+01	7.53E-03	2.86E-06	2.24E-06	4.22E-06	8.28E-01	1.69E-01	4.78E-01	7.38E-01	2.07E-01	8.08E-04
Nitrogen (7)	N-13	3.66E+04	1.90E-05	0.00E+00	0.00E+00	0.00E+00	5.60E+00	1.16E+00	3.31E+00	5.08E+00	1.20E+00	5.34E-03
Nitrogen (7)	N-16	3.07E+06	2.26E-07	0.00E+00	0.00E+00	0.00E+00	3.23E+01	4.26E+00	1.26E+01	2.22E+01	4.02E+00	3.02E-02
Sodium (11)	Na-22	2.66E-01	2.60E+00	1.44E-05	1.17E-05	1.17E-04	1.29E+01	2.45E+00	7.02E+00	1.12E+01	2.40E+00	1.19E-02
Sodium (11)	Na-24	4.06E+02	1.71E-03	2.02E-06	1.61E-06	2.73E-06	2.73E+01	4.32E+00	1.27E+01	2.13E+01	4.20E+00	2.43E-02
Niobium (41)	Nb-87	9.71E+04	7.13E-06	0.00E+00	0.00E+00	0.00E+00	6.56E+00	1.43E+00	3.98E+00	6.01E+00	1.54E+00	6.47E-03
Niobium (41)	Nb-88	2.51E+04	2.76E-05	3.49E-07	2.66E-07	1.36E-07	2.45E+01	4.76E+00	1.36E+01	2.13E+01	4.80E+00	2.27E-02
Niobium (41)	Nb-88m	4.68E+04	1.48E-05	0.00E+00	0.00E+00	0.00E+00	2.41E+01	4.63E+00	1.32E+01	2.09E+01	4.66E+00	2.23E-02
Niobium (41)	Nb-89	2.99E+03	2.32E-04	1.37E-06	9.88E-07	5.33E-07	8.18E+00	1.54E+00	4.37E+00	6.97E+00	1.60E+00	7.60E-03
Niobium (41)	Nb-89m	5.52E+03	1.26E-04	6.66E-07	5.07E-07	3.10E-07	7.21E+00	1.50E+00	4.24E+00	6.54E+00	1.57E+00	6.87E-03
Niobium (41)	Nb-90	4.16E+02	1.67E-03	5.99E-06	4.63E-06	2.94E-06	2.63E+01	4.52E+00	1.32E+01	2.15E+01	4.42E+00	2.39E-02
Niobium (41)	Nb-91	1.02E-03	6.80E+02	2.30E-07	1.62E-07	7.29E-06	9.12E-03	2.13E-03	5.49E-03	8.29E-03	5.54E-03	9.87E-06

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Niobium (41)	Nb-91m	4.16E+00	1.67E-01	2.09E-06	1.52E-06	1.69E-05	1.51E-01	2.78E-02	7.96E-02	1.28E-01	3.06E-02	1.40E-04	
Niobium (41)	Nb-92	2.00E-08	3.47E+07	4.70E-06	3.77E-06	1.05E-04	8.63E+00	1.68E+00	4.82E+00	7.58E+00	1.66E+00	7.97E-03	
Niobium (41)	Nb-92m	2.49E+01	2.78E-02	2.32E-06	1.86E-06	1.92E-06	5.66E+00	1.07E+00	3.08E+00	4.89E+00	1.06E+00	5.18E-03	
Niobium (41)	Nb-93m	4.30E-02	1.61E+01	6.59E-07	4.77E-07	7.73E-06	7.30E-05	7.32E-05	7.30E-05	7.30E-05	7.98E-04	3.55E-07	
Niobium (41)	Nb-94	3.41E-05	2.03E+04	8.25E-06	6.40E-06	1.89E-04	9.02E+00	1.75E+00	5.02E+00	7.92E+00	1.73E+00	8.33E-03	
Niobium (41)	Nb-94m	5.82E+04	1.19E-05	0.00E+00	0.00E+00	0.00E+00	2.60E-02	5.23E-03	1.44E-02	2.26E-02	8.15E-03	2.51E-05	
Niobium (41)	Nb-95	7.23E+00	9.59E-02	2.78E-06	2.17E-06	7.14E-06	4.41E+00	8.61E-01	2.47E+00	3.89E+00	8.49E-01	4.08E-03	
Niobium (41)	Nb-95m	7.01E+01	9.89E-03	3.09E-06	2.25E-06	3.70E-06	3.03E-01	7.01E-02	1.98E-01	2.90E-01	7.31E-02	3.30E-04	
Niobium (41)	Nb-96	2.60E+02	2.67E-03	5.25E-06	4.07E-06	2.91E-06	1.43E+01	2.76E+00	7.92E+00	1.25E+01	2.72E+00	1.32E-02	
Niobium (41)	Nb-97	5.05E+03	1.37E-04	3.40E-07	2.55E-07	1.97E-07	3.79E+00	7.57E-01	2.17E+00	3.36E+00	7.97E-01	3.55E-03	
Niobium (41)	Nb-98m	7.10E+03	9.76E-05	5.25E-07	4.03E-07	2.61E-07	1.68E+01	3.14E+00	9.04E+00	1.44E+01	3.17E+00	1.54E-02	
Niobium (41)	Nb-99	1.46E+06	4.76E-07	0.00E+00	0.00E+00	0.00E+00	7.25E-01	2.28E-01	5.42E-01	7.14E-01	3.60E-01	9.71E-04	
Niobium (41)	Nb-99m	1.40E+05	4.95E-06	0.00E+00	0.00E+00	0.00E+00	4.91E+00	8.54E-01	2.41E+00	3.96E+00	9.39E-01	4.51E-03	
Neodymium (60)	Nd-134	4.29E+04	1.62E-05	0.00E+00	0.00E+00	0.00E+00	2.67E+00	5.90E-01	1.64E+00	2.47E+00	6.14E-01	2.71E-03	
Neodymium (60)	Nd-135	2.94E+04	2.36E-05	2.87E-07	2.17E-07	1.18E-07	6.76E+00	1.43E+00	4.02E+00	6.13E+00	1.52E+00	6.57E-03	
Neodymium (60)	Nd-136	7.19E+03	9.64E-05	4.81E-07	3.68E-07	2.36E-07	1.23E+00	2.80E-01	7.53E-01	1.12E+00	3.03E-01	1.28E-03	
Neodymium (60)	Nd-137	9.46E+03	7.32E-05	2.60E-07	1.98E-07	1.25E-07	6.61E+00	1.30E+00	3.68E+00	5.77E+00	1.32E+00	6.22E-03	
Neodymium (60)	Nd-138	1.20E+03	5.75E-04	3.22E-06	2.37E-06	1.12E-06	8.93E-02	2.93E-02	6.30E-02	8.50E-02	4.44E-02	1.26E-04	
Neodymium (60)	Nd-139	1.23E+04	5.65E-05	1.01E-07	7.66E-08	4.85E-08	2.39E+00	4.89E-01	1.37E+00	2.13E+00	5.18E-01	2.28E-03	
Neodymium (60)	Nd-139m	1.10E+03	6.28E-04	1.15E-06	8.95E-07	6.70E-07	9.00E+00	1.74E+00	4.97E+00	7.83E+00	1.73E+00	8.40E-03	
Neodymium (60)	Nd-140	7.51E+01	9.23E-03	1.00E-05	7.36E-06	4.92E-06	1.68E-02	1.29E-02	1.67E-02	1.68E-02	2.79E-02	5.18E-05	
Neodymium (60)	Nd-141	2.44E+03	2.84E-04	4.18E-08	3.19E-08	2.36E-08	2.91E-01	6.65E-02	1.71E-01	2.58E-01	8.11E-02	3.08E-04	
Neodymium (60)	Nd-141m	3.52E+05	1.97E-06	0.00E+00	0.00E+00	0.00E+00	4.00E+00	7.83E-01	2.24E+00	3.51E+00	7.81E-01	3.69E-03	
Neodymium (60)	Nd-144	3.03E-16	2.29E+15	1.95E-04	1.51E-04	7.44E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Neodymium (60)	Nd-147	2.30E+01	3.01E-02	5.48E-06	4.00E-06	9.88E-06	6.18E-01	1.45E-01	3.89E-01	5.70E-01	1.64E-01	6.70E-04	
Neodymium (60)	Nd-149	3.51E+03	1.97E-04	6.25E-07	4.63E-07	3.92E-07	1.83E+00	4.11E-01	1.15E+00	1.70E+00	4.61E-01	1.90E-03	
Neodymium (60)	Nd-151	2.93E+04	2.37E-05	1.41E-07	1.06E-07	7.59E-08	4.80E+00	9.49E-01	2.69E+00	4.20E+00	1.00E+00	4.59E-03	
Neodymium (60)	Nd-152	3.20E+04	2.17E-05	2.41E-07	1.79E-07	1.04E-07	8.14E-01	1.83E-01	5.17E-01	7.68E-01	2.05E-01	8.51E-04	
Neon (10)	Ne-19	1.27E+06	5.46E-07	0.00E+00	0.00E+00	0.00E+00	5.64E+00	1.18E+00	3.34E+00	5.12E+00	1.27E+00	5.41E-03	
Neon (10)	Ne-24	1.08E+05	6.43E-06	0.00E+00	0.00E+00	0.00E+00	3.01E+00	6.31E-01	1.77E+00	2.73E+00	7.19E-01	2.90E-03	
Nickel (28)	Ni-56	4.16E+01	1.66E-02	4.00E-06	3.22E-06	5.40E-06	9.69E+00	1.92E+00	5.49E+00	8.56E+00	1.88E+00	9.13E-03	
Nickel (28)	Ni-57	1.71E+02	4.06E-03	4.33E-06	3.38E-06	2.43E-06	1.18E+01	2.13E+00	6.15E+00	9.90E+00	2.08E+00	1.07E-02	
Nickel (28)	Ni-59	6.86E-06	1.01E+05	2.95E-07	2.31E-07	3.38E-06	8.54E-05	1.76E-05	5.02E-05	7.73E-05	1.73E-05	8.08E-08	
Nickel (28)	Ni-63	6.92E-03	1.00E+02	7.33E-07	5.74E-07	8.25E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Nickel (28)	Ni-65	2.41E+03	2.87E-04	9.10E-07	6.73E-07	1.50E-06	3.47E+00	6.24E-01	1.79E+00	2.90E+00	6.75E-01	3.18E-03	
Nickel (28)	Ni-66	1.11E+02	6.23E-03	1.54E-05	1.12E-05	7.92E-06	4.76E-05	2.24E-05	4.18E-05	4.74E-05	4.03E-05	1.59E-06	
Neptunium (93)	Np-232	2.48E+04	2.80E-05	4.59E-08	3.65E-08	1.01E-07	6.54E+00	1.32E+00	3.75E+00	5.81E+00	1.31E+00	6.25E-03	
Neptunium (93)	Np-233	1.01E+04	6.89E-05	1.09E-08	8.40E-09	8.40E-09	2.93E-01	8.72E-02	2.22E-01	2.90E-01	9.02E-02	3.95E-04	
Neptunium (93)	Np-234	5.75E+01	1.21E-02	3.06E-06	2.39E-06	1.97E-06	6.67E+00	1.19E+00	3.44E+00	5.55E+00	1.17E+00	6.11E-03	
Neptunium (93)	Np-235	6.39E-01	1.09E+00	2.95E-07	2.09E-07	2.33E-06	1.89E-03	7.25E-04	1.53E-03	1.89E-03	2.53E-03	3.32E-06	
Neptunium (93)	Np-236	4.50E-06	1.54E+05	9.99E-05	9.18E-05	4.22E-02	5.01E-01	1.43E-01	3.74E-01	4.95E-01	1.50E-01	6.50E-04	
Neptunium (93)	Np-236m	2.70E+02	2.57E-03	9.88E-07	7.25E-07	1.71E-05	1.69E-01	4.82E-02	1.24E-01	1.64E-01	5.05E-02	2.22E-04	
Neptunium (93)	Np-237	3.23E-07	2.14E+06	4.63E-04	3.96E-04	4.66E-02	6.71E-02	2.24E-02	5.34E-02	6.69E-02	2.85E-02	1.00E-04	
Neptunium (93)	Np-238	1.19E+02	5.80E-03	4.44E-06	3.31E-06	6.14E-06	3.46E+00	6.50E-01	1.87E+00	2.97E+00	6.58E-01	3.18E-03	
Neptunium (93)	Np-239	1.07E+02	6.46E-03	4.11E-06	3.01E-06	4.33E-06	7.25E-01	1.87E-01	5.06E-01	7.02E-01	1.89E-01	8.58E-04	
Neptunium (93)	Np-240	5.88E+03	1.18E-04	3.55E-07	2.68E-07	3.13E-07	5.85E+00	1.16E+00	3.31E+00	5.16E+00	1.17E+00	5.52E-03	
Neptunium (93)	Np-240m	5.04E+04	1.37E-05	0.00E+00	0.00E+00	0.00E+00	1.83E+00	3.68E-01	1.04E+00	1.62E+00	4.38E-01	1.74E-03	
Neptunium (93)	Np-241	2.62E+04	2.64E-05	7.73E-08	5.77E-08	5.22E-08	1.49E-01	4.26E-02	1.08E-01	1.45E-01	8.51E-02	2.09E-04	
Neptunium (93)	Np-242	1.66E+05	4.19E-06	0.00E+00	0.00E+00	0.00E+00	1.66E+00	3.14E-01	8.72E-01	1.40E+00	4.02E-01	1.55E-03	
Neptunium (93)	Np-242m	6.62E+04	1.05E-05	0.00E+00	0.00E+00	0.00E+00	5.16E+00	1.02E+00	2.90E+00	4.54E+00	1.07E+00	4.86E-03	
Oxygen (8)	O-14	3.10E+05	2.24E-06	0.00E+00	0.00E+00	0.00E+00	2.09E+01	3.57E+00	1.04E+01	1.70E+01	3.54E+00	1.90E-02	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Oxygen (8)	O-15	1.79E+05	3.88E-06	0.00E+00	0.00E+00	0.00E+00	5.62E+00	1.17E+00	3.33E+00	5.10E+00	1.25E+00	5.37E-03	
Oxygen (8)	O-19	8.26E+05	8.39E-07	0.00E+00	0.00E+00	0.00E+00	5.68E+00	1.10E+00	3.06E+00	4.84E+00	1.20E+00	5.37E-03	
Osmium (76)	Os-180	1.69E+04	4.09E-05	8.84E-08	6.88E-08	6.55E-08	4.63E-01	1.21E-01	3.04E-01	4.30E-01	1.31E-01	5.45E-04	
Osmium (76)	Os-181	3.47E+03	2.00E-04	4.37E-07	3.41E-07	2.79E-07	7.79E+00	1.51E+00	4.28E+00	6.72E+00	1.48E+00	7.37E-03	
Osmium (76)	Os-182	2.75E+02	2.52E-03	2.78E-06	2.15E-06	1.74E-06	2.05E+00	4.67E-01	1.29E+00	1.91E+00	4.70E-01	2.13E-03	
Osmium (76)	Os-183	4.67E+02	1.48E-03	1.09E-06	8.40E-07	8.14E-07	3.01E+00	6.76E-01	1.85E+00	2.75E+00	6.82E-01	3.11E-03	
Osmium (76)	Os-183m	6.13E+02	1.13E-03	9.77E-07	7.70E-07	6.44E-07	5.83E+00	1.10E+00	3.14E+00	4.99E+00	1.09E+00	5.41E-03	
Osmium (76)	Os-185	2.70E+00	2.56E-01	2.35E-06	1.86E-06	6.40E-06	3.75E+00	7.66E-01	2.17E+00	3.34E+00	7.65E-01	3.57E-03	
Osmium (76)	Os-186	3.47E-16	2.00E+15	1.59E-04	1.18E-04	1.67E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Osmium (76)	Os-189m	1.05E+03	6.62E-04	8.73E-08	6.33E-08	2.38E-08	1.46E-06	1.46E-06	1.46E-06	1.46E-06	4.71E-05	1.20E-08	
Osmium (76)	Os-190m	3.68E+04	1.88E-05	0.00E+00	0.00E+00	0.00E+00	8.52E+00	1.79E+00	5.08E+00	7.77E+00	1.77E+00	8.22E-03	
Osmium (76)	Os-191	1.64E+01	4.22E-02	2.94E-06	2.15E-06	8.18E-06	2.30E-01	7.73E-02	1.84E-01	2.28E-01	8.31E-02	3.44E-04	
Osmium (76)	Os-191m	4.63E+02	1.50E-03	5.03E-07	3.65E-07	6.81E-07	1.10E-02	4.91E-03	9.96E-03	1.10E-02	5.89E-03	2.13E-05	
Osmium (76)	Os-193	2.02E+02	3.44E-03	4.22E-06	3.06E-06	2.34E-06	3.14E-01	7.45E-02	2.00E-01	2.91E-01	1.05E-01	3.54E-04	
Osmium (76)	Os-194	1.16E-01	6.00E+00	1.26E-05	9.18E-06	3.36E-04	2.20E-03	1.46E-03	2.17E-03	2.20E-03	2.58E-03	5.94E-06	
Osmium (76)	Os-196	1.04E+04	6.64E-05	5.48E-07	4.07E-07	2.46E-07	3.83E-01	9.00E-02	2.45E-01	3.57E-01	1.23E-01	4.25E-04	
Phosphorus (15)	P-30	1.46E+05	4.75E-06	0.00E+00	0.00E+00	0.00E+00	5.70E+00	1.21E+00	3.38E+00	5.17E+00	1.32E+00	5.48E-03	
Phosphorus (15)	P-32	1.77E+01	3.91E-02	1.25E-05	8.88E-06	1.62E-05	2.04E-02	1.24E-02	1.69E-02	1.98E-02	9.96E-02	6.26E-05	
Phosphorus (15)	P-33	9.98E+00	6.94E-02	1.25E-06	9.07E-07	7.25E-06	5.02E-05	2.37E-05	4.41E-05	5.01E-05	1.68E-05	1.68E-06	
Protactinium (91)	Pa-227	9.51E+03	7.29E-05	2.28E-06	1.68E-06	3.17E-04	5.45E-02	1.89E-02	4.45E-02	5.45E-02	2.10E-02	8.38E-05	
Protactinium (91)	Pa-228	2.76E+02	2.51E-03	4.00E-06	2.95E-06	2.88E-04	7.71E+00	1.50E+00	4.28E+00	6.71E+00	1.47E+00	7.25E-03	
Protactinium (91)	Pa-229	1.69E+02	4.11E-03	4.18E-07	3.08E-07	2.88E-05	1.87E-01	6.05E-02	1.50E-01	1.87E-01	6.38E-02	2.72E-04	
Protactinium (91)	Pa-230	1.45E+01	4.77E-02	4.48E-06	3.07E-06	2.72E-03	3.68E+00	7.34E-01	2.07E+00	3.23E+00	7.27E-01	3.49E-03	
Protactinium (91)	Pa-231	2.12E-05	3.28E+04	2.07E-03	1.77E-03	8.77E-01	1.61E-01	3.74E-02	1.03E-01	1.52E-01	4.06E-02	1.69E-04	
Protactinium (91)	Pa-232	1.93E+02	3.59E-03	3.28E-06	2.49E-06	9.62E-06	5.36E+00	1.04E+00	2.99E+00	4.69E+00	1.03E+00	4.97E-03	
Protactinium (91)	Pa-233	9.38E+00	7.39E-02	4.88E-06	3.57E-06	1.69E-05	1.02E+00	2.37E-01	6.59E-01	9.64E-01	2.36E-01	1.08E-03	
Protactinium (91)	Pa-234	9.06E+02	7.65E-04	2.06E-06	1.55E-06	1.47E-06	8.28E+00	1.62E+00	4.63E+00	7.25E+00	1.61E+00	7.79E-03	
Protactinium (91)	Pa-234m	3.11E+05	2.23E-06	0.00E+00	0.00E+00	0.00E+00	1.26E-01	3.62E-02	7.66E-02	1.11E-01	1.31E-01	1.66E-04	
Protactinium (91)	Pa-235	1.49E+04	4.66E-05	1.32E-07	9.77E-08	7.33E-08	9.30E-03	5.57E-03	7.75E-03	9.10E-03	5.90E-02	3.91E-05	
Protactinium (91)	Pa-236	4.00E+04	1.73E-05	0.00E+00	0.00E+00	0.00E+00	5.53E+00	1.01E+00	2.91E+00	4.67E+00	1.08E+00	5.09E-03	
Protactinium (91)	Pa-237	4.19E+04	1.66E-05	0.00E+00	0.00E+00	0.00E+00	3.51E+00	6.93E-01	1.98E+00	3.10E+00	7.48E-01	3.29E-03	
Lead (82)	Pb-194	3.04E+04	2.28E-05	9.84E-08	7.55E-08	5.81E-08	6.09E+00	1.18E+00	3.34E+00	5.25E+00	1.16E+00	5.77E-03	
Lead (82)	Pb-195m	2.43E+04	2.85E-05	1.18E-07	9.21E-08	1.01E-07	9.04E+00	1.85E+00	5.23E+00	8.09E+00	1.84E+00	8.64E-03	
Lead (82)	Pb-196	9.84E+03	7.04E-05	1.28E-07	1.01E-07	1.11E-07	2.37E+00	5.36E-01	1.48E+00	2.19E+00	5.35E-01	2.45E-03	
Lead (82)	Pb-197	4.55E+04	1.52E-05	0.00E+00	0.00E+00	0.00E+00	8.99E+00	1.67E+00	4.80E+00	7.62E+00	1.64E+00	8.34E-03	
Lead (82)	Pb-197m	8.47E+03	8.18E-05	2.12E-07	1.65E-07	2.05E-07	6.30E+00	1.30E+00	3.68E+00	5.64E+00	1.29E+00	6.10E-03	
Lead (82)	Pb-198	2.53E+03	2.74E-04	3.59E-07	2.93E-07	2.83E-07	2.05E+00	4.74E-01	1.31E+00	1.92E+00	4.73E-01	2.17E-03	
Lead (82)	Pb-199	4.05E+03	1.71E-04	1.81E-07	1.46E-07	1.34E-07	5.96E+00	1.13E+00	3.23E+00	5.10E+00	1.12E+00	5.59E-03	
Lead (82)	Pb-200	2.82E+02	2.45E-03	1.76E-06	1.43E-06	1.50E-06	7.62E-01	2.11E-01	5.45E-01	7.38E-01	2.16E-01	9.53E-04	
Lead (82)	Pb-201	6.51E+02	1.07E-03	7.29E-07	6.03E-07	5.25E-07	3.98E+00	8.33E-01	2.34E+00	3.57E+00	8.24E-01	3.90E-03	
Lead (82)	Pb-201m	3.58E+05	1.93E-06	0.00E+00	0.00E+00	0.00E+00	1.98E+00	4.09E-01	1.15E+00	1.78E+00	4.43E-01	1.90E-03	
Lead (82)	Pb-202	1.32E-05	5.25E+04	7.73E-05	5.77E-05	1.96E-04	7.12E-06	7.12E-06	7.12E-06	7.12E-06	2.20E-04	5.66E-08	
Lead (82)	Pb-202m	1.72E+03	4.03E-04	6.66E-07	5.48E-07	4.59E-07	1.14E+01	2.24E+00	6.41E+00	1.00E+01	2.21E+00	1.06E-02	
Lead (82)	Pb-203	1.17E+02	5.92E-03	1.14E-06	9.25E-07	9.55E-07	1.39E+00	3.36E-01	9.19E-01	1.32E+00	3.36E-01	1.53E-03	
Lead (82)	Pb-204m	5.42E+03	1.28E-04	2.22E-07	1.80E-07	1.31E-07	1.19E+01	2.32E+00	6.63E+00	1.04E+01	2.29E+00	1.10E-02	
Lead (82)	Pb-205	4.53E-08	1.53E+07	1.30E-06	1.00E-06	3.29E-06	7.21E-06	7.21E-06	7.21E-06	7.21E-06	2.22E-04	5.74E-08	
Lead (82)	Pb-209	1.87E+03	3.71E-04	2.76E-07	2.10E-07	2.58E-07	7.53E-04	2.95E-04	5.96E-04	7.42E-04	3.73E-03	1.17E-05	
Lead (82)	Pb-210	3.12E-02	2.22E+01	3.77E-03	2.58E-03	2.23E-02	2.09E-03	1.33E-03	2.05E-03	2.09E-03	2.54E-03	5.50E-06	
Lead (82)	Pb-211	1.01E+04	6.87E-05	9.69E-07	6.59E-07	5.03E-05	3.68E-01	7.75E-02	2.13E-01	3.29E-01	1.26E-01	3.76E-04	
Lead (82)	Pb-212	5.71E+02	1.21E-03	3.81E-05	2.22E-05	3.89E-04	6.31E-01	1.55E-01	4.26E-01	6.05E-01	1.54E-01	7.13E-04	
Lead (82)	Pb-214	1.36E+04	5.10E-05	7.36E-07	5.14E-07	4.66E-05	1.26E+00	2.80E-01	7.90E-01	1.17E+00	2.84E-01	1.30E-03	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Palladium (46)	Pd-100	6.97E+01	9.95E-03	4.37E-06	3.40E-06	3.47E-06	2.63E-01	9.55E-02	2.19E-01	2.63E-01	1.17E-01	4.25E-04	
Palladium (46)	Pd-101	7.17E+02	9.67E-04	4.51E-07	3.46E-07	2.73E-07	1.82E+00	3.68E-01	1.05E+00	1.62E+00	3.75E-01	1.73E-03	
Palladium (46)	Pd-103	1.49E+01	4.66E-02	9.73E-07	7.03E-07	1.85E-06	1.87E-03	1.42E-03	1.65E-03	1.83E-03	8.95E-03	6.18E-06	
Palladium (46)	Pd-107	1.07E-07	6.50E+06	1.96E-07	1.42E-07	2.44E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Palladium (46)	Pd-109	4.43E+02	1.56E-03	2.85E-06	2.06E-06	1.63E-06	1.80E-02	7.21E-03	1.42E-02	1.76E-02	4.35E-02	4.90E-05	
Palladium (46)	Pd-109m	7.77E+04	8.92E-06	0.00E+00	0.00E+00	0.00E+00	4.78E-01	1.17E-01	3.25E-01	4.63E-01	1.17E-01	5.36E-04	
Palladium (46)	Pd-111	1.56E+04	4.45E-05	2.50E-07	1.85E-07	1.16E-07	3.10E-01	7.21E-02	1.78E-01	2.71E-01	1.71E-01	3.37E-04	
Palladium (46)	Pd-112	2.89E+02	2.40E-03	1.31E-05	9.55E-06	4.88E-06	3.40E-04	3.12E-04	3.33E-04	3.40E-04	2.60E-03	3.13E-06	
Palladium (46)	Pd-114	1.51E+05	4.60E-06	0.00E+00	0.00E+00	0.00E+00	1.31E-01	3.53E-02	8.89E-02	1.26E-01	9.77E-02	1.74E-04	
Palladium (46)	Pd-96	1.79E+05	3.87E-06	0.00E+00	0.00E+00	0.00E+00	8.07E+00	1.60E+00	4.58E+00	7.14E+00	1.61E+00	7.60E-03	
Palladium (46)	Pd-97	1.17E+05	5.90E-06	0.00E+00	0.00E+00	0.00E+00	1.42E+01	2.63E+00	7.58E+00	1.21E+01	2.64E+00	1.31E-02	
Palladium (46)	Pd-98	2.06E+04	3.37E-05	3.05E-07	2.31E-07	1.24E-07	2.07E+00	4.41E-01	1.23E+00	1.86E+00	4.47E-01	2.06E-03	
Palladium (46)	Pd-99	1.70E+04	4.07E-05	1.70E-07	1.30E-07	8.44E-08	7.25E+00	1.42E+00	4.05E+00	6.33E+00	1.45E+00	6.87E-03	
Promethium (61)	Pm-136	2.04E+05	3.39E-06	0.00E+00	0.00E+00	0.00E+00	1.54E+01	3.16E+00	8.91E+00	1.38E+01	3.24E+00	1.46E-02	
Promethium (61)	Pm-137m	1.52E+05	4.57E-06	0.00E+00	0.00E+00	0.00E+00	9.68E+00	2.02E+00	5.68E+00	8.70E+00	2.09E+00	9.35E-03	
Promethium (61)	Pm-139	8.78E+04	7.90E-06	0.00E+00	0.00E+00	0.00E+00	5.25E+00	1.09E+00	3.04E+00	4.71E+00	1.17E+00	5.01E-03	
Promethium (61)	Pm-140	2.38E+06	2.92E-07	0.00E+00	0.00E+00	0.00E+00	6.01E+00	1.27E+00	3.53E+00	5.42E+00	1.38E+00	5.76E-03	
Promethium (61)	Pm-140m	6.12E+04	1.13E-05	0.00E+00	0.00E+00	0.00E+00	1.74E+01	3.44E+00	9.79E+00	1.53E+01	3.47E+00	1.62E-02	
Promethium (61)	Pm-141	1.74E+04	3.98E-05	1.72E-07	1.30E-07	6.40E-08	4.13E+00	8.33E-01	2.35E+00	3.66E+00	8.88E-01	3.91E-03	
Promethium (61)	Pm-142	5.40E+05	1.28E-06	0.00E+00	0.00E+00	0.00E+00	4.82E+00	1.01E+00	2.82E+00	4.33E+00	1.11E+00	4.61E-03	
Promethium (61)	Pm-143	9.55E-01	7.26E-01	1.11E-06	8.70E-07	1.21E-05	1.66E+00	3.36E-01	9.41E-01	1.47E+00	3.47E-01	1.58E-03	
Promethium (61)	Pm-144	6.97E-01	9.95E-01	4.59E-06	3.65E-06	7.07E-05	8.67E+00	1.75E+00	4.99E+00	7.73E+00	1.74E+00	8.12E-03	
Promethium (61)	Pm-145	3.92E-02	1.77E+01	5.48E-07	4.11E-07	3.19E-05	2.28E-02	1.58E-02	2.24E-02	2.28E-02	3.09E-02	6.42E-05	
Promethium (61)	Pm-146	1.25E-01	5.53E+00	4.37E-06	3.32E-06	1.77E-04	4.11E+00	8.37E-01	2.37E+00	3.68E+00	8.38E-01	3.89E-03	
Promethium (61)	Pm-147	2.64E-01	2.62E+00	1.34E-06	9.66E-07	1.96E-05	4.32E-05	1.89E-05	3.68E-05	4.30E-05	3.28E-05	1.01E-06	
Promethium (61)	Pm-148	4.71E+01	1.47E-02	1.36E-05	9.95E-06	9.29E-06	3.49E+00	6.50E-01	1.85E+00	2.97E+00	7.14E-01	3.22E-03	
Promethium (61)	Pm-148m	6.13E+00	1.13E-01	8.44E-06	6.51E-06	2.33E-05	1.12E+01	2.24E+00	6.43E+00	9.99E+00	2.22E+00	1.05E-02	
Promethium (61)	Pm-149	1.14E+02	6.06E-03	5.07E-06	3.67E-06	3.10E-06	6.59E-02	1.58E-02	4.17E-02	6.15E-02	4.84E-02	8.87E-05	
Promethium (61)	Pm-150	2.27E+03	3.06E-04	1.29E-06	9.66E-07	5.77E-07	8.82E+00	1.64E+00	4.71E+00	7.51E+00	1.68E+00	8.14E-03	
Promethium (61)	Pm-151	2.14E+02	3.24E-03	3.69E-06	2.72E-06	2.05E-06	1.65E+00	3.62E-01	1.02E+00	1.52E+00	3.80E-01	1.68E-03	
Promethium (61)	Pm-152	8.84E+04	7.84E-06	0.00E+00	0.00E+00	0.00E+00	1.74E+00	3.57E-01	9.58E-01	1.49E+00	4.72E-01	1.69E-03	
Promethium (61)	Pm-152m	4.84E+04	1.43E-05	0.00E+00	0.00E+00	0.00E+00	8.74E+00	1.69E+00	4.82E+00	7.57E+00	1.75E+00	8.26E-03	
Promethium (61)	Pm-153	6.94E+04	9.99E-06	0.00E+00	0.00E+00	0.00E+00	2.91E-01	8.65E-02	2.09E-01	2.82E-01	1.73E-01	3.97E-04	
Promethium (61)	Pm-154	2.11E+05	3.29E-06	0.00E+00	0.00E+00	0.00E+00	1.12E+01	1.94E+00	5.64E+00	9.21E+00	1.99E+00	1.02E-02	
Promethium (61)	Pm-154m	1.36E+05	5.10E-06	0.00E+00	0.00E+00	0.00E+00	1.07E+01	1.98E+00	5.68E+00	9.06E+00	2.05E+00	9.92E-03	
Polonium (84)	Po-203	9.92E+03	6.98E-05	2.19E-07	1.75E-07	2.01E-07	9.47E+00	1.80E+00	5.14E+00	8.13E+00	1.78E+00	8.82E-03	
Polonium (84)	Po-204	1.72E+03	4.03E-04	1.12E-06	8.92E-07	1.71E-06	6.20E+00	1.27E+00	3.57E+00	5.49E+00	1.26E+00	6.02E-03	
Polonium (84)	Po-205	3.66E+03	1.89E-04	2.52E-07	2.04E-07	2.00E-07	9.19E+00	1.74E+00	4.99E+00	7.88E+00	1.72E+00	8.54E-03	
Polonium (84)	Po-206	2.87E+01	2.41E-02	8.84E-05	6.18E-05	2.62E-04	6.52E+00	1.32E+00	3.74E+00	5.77E+00	1.30E+00	6.22E-03	
Polonium (84)	Po-207	1.05E+03	6.62E-04	5.07E-07	4.11E-07	4.11E-07	7.32E+00	1.42E+00	4.03E+00	6.35E+00	1.40E+00	6.84E-03	
Polonium (84)	Po-208	2.39E-01	2.90E+00	8.10E-03	5.62E-03	2.75E-02	1.12E-04	2.35E-05	6.63E-05	1.01E-04	2.34E-05	1.09E-07	
Polonium (84)	Po-209	6.79E-03	1.02E+02	8.07E-03	5.59E-03	3.77E-02	3.33E-02	6.82E-03	1.92E-02	2.95E-02	6.75E-03	3.22E-05	
Polonium (84)	Po-210	1.83E+00	3.79E-01	6.48E-03	4.48E-03	1.73E-02	5.64E-05	1.09E-05	3.14E-05	4.93E-05	1.08E-05	5.20E-08	
Polonium (84)	Po-211	4.24E+07	1.64E-08	0.00E+00	0.00E+00	0.00E+00	4.71E-02	9.19E-03	2.63E-02	4.13E-02	9.07E-03	4.36E-05	
Polonium (84)	Po-212	7.31E+13	9.48E-15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Polonium (84)	Po-212m	4.85E+05	1.43E-06	0.00E+00	0.00E+00	0.00E+00	5.21E-01	8.28E-02	2.43E-01	4.07E-01	7.90E-02	4.66E-04	
Polonium (84)	Po-213	5.20E+12	1.33E-13	0.00E+00	0.00E+00	0.00E+00	2.17E-04	4.22E-05	1.21E-04	1.91E-04	4.17E-05	2.00E-07	
Polonium (84)	Po-214	1.33E+11	5.21E-12	0.00E+00	0.00E+00	0.00E+00	4.80E-04	9.34E-05	2.67E-04	4.22E-04	9.20E-05	4.44E-07	
Polonium (84)	Po-215	1.23E+10	5.65E-11	0.00E+00	0.00E+00	0.00E+00	9.45E-04	2.00E-04	5.70E-04	8.67E-04	1.96E-04	9.11E-07	
Polonium (84)	Po-216	1.51E+08	4.60E-09	0.00E+00	0.00E+00	0.00E+00	8.87E-05	1.72E-05	4.93E-05	7.77E-05	1.70E-05	8.17E-08	
Polonium (84)	Po-218	1.17E+05	5.90E-06	0.00E+00	0.00E+00	7.62E-06	9.23E-09	4.33E-09	8.11E-09	9.23E-09	7.77E-09	3.06E-10	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Praseodymium (59)	Pr-134	3.31E+04	2.09E-05	2.39E-07	1.82E-07	9.32E-08	1.79E+01	3.57E+00	1.01E+01	1.58E+01	3.60E+00	1.68E-02	
Praseodymium (59)	Pr-134m	2.14E+04	3.23E-05	4.14E-07	3.13E-07	1.42E-07	1.36E+01	2.62E+00	7.45E+00	1.17E+01	2.68E+00	1.26E-02	
Praseodymium (59)	Pr-135	1.52E+04	4.57E-05	2.12E-07	1.61E-07	9.07E-08	4.71E+00	9.79E-01	2.75E+00	4.22E+00	1.04E+00	4.54E-03	
Praseodymium (59)	Pr-136	2.78E+04	2.49E-05	1.65E-07	1.26E-07	6.22E-08	1.25E+01	2.39E+00	6.86E+00	1.08E+01	2.43E+00	1.16E-02	
Praseodymium (59)	Pr-137	4.74E+03	1.46E-04	1.80E-07	1.36E-07	8.51E-08	1.98E+00	4.05E-01	1.14E+00	1.76E+00	4.34E-01	1.89E-03	
Praseodymium (59)	Pr-138	2.51E+05	2.76E-06	0.00E+00	0.00E+00	0.00E+00	4.54E+00	9.60E-01	2.67E+00	4.11E+00	1.05E+00	4.36E-03	
Praseodymium (59)	Pr-138m	2.86E+03	2.42E-04	6.18E-07	4.77E-07	3.36E-07	1.42E+01	2.76E+00	7.90E+00	1.24E+01	2.75E+00	1.32E-02	
Praseodymium (59)	Pr-139	1.38E+03	5.03E-04	1.61E-07	1.21E-07	8.92E-08	6.00E-01	1.28E-01	3.49E-01	5.36E-01	1.45E-01	5.95E-04	
Praseodymium (59)	Pr-140	1.07E+05	6.45E-06	0.00E+00	0.00E+00	0.00E+00	2.97E+00	6.24E-01	1.75E+00	2.69E+00	6.85E-01	2.85E-03	
Praseodymium (59)	Pr-142	3.18E+02	2.18E-03	6.73E-06	4.88E-06	2.47E-06	4.02E-01	8.16E-02	2.09E-01	3.33E-01	1.72E-01	4.08E-04	
Praseodymium (59)	Pr-142m	2.49E+04	2.78E-05	8.58E-08	6.22E-08	3.14E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Praseodymium (59)	Pr-143	1.86E+01	3.72E-02	5.99E-06	4.33E-06	1.01E-05	2.93E-03	1.54E-03	2.39E-03	2.88E-03	2.43E-02	2.28E-05	
Praseodymium (59)	Pr-144	2.11E+04	3.29E-05	2.52E-07	1.87E-07	8.07E-08	2.47E-01	6.82E-02	1.43E-01	2.11E-01	1.88E-01	2.93E-04	
Praseodymium (59)	Pr-144m	5.06E+04	1.37E-05	0.00E+00	0.00E+00	0.00E+00	1.65E-02	6.91E-03	1.18E-02	1.50E-02	1.27E-02	2.94E-05	
Praseodymium (59)	Pr-145	1.01E+03	6.83E-04	2.01E-06	1.46E-06	7.44E-07	1.27E-01	3.29E-02	7.57E-02	1.12E-01	1.15E-01	1.60E-04	
Praseodymium (59)	Pr-146	1.51E+04	4.59E-05	3.85E-07	2.87E-07	1.32E-07	6.22E+00	1.15E+00	3.27E+00	5.22E+00	1.24E+00	5.74E-03	
Praseodymium (59)	Pr-147	2.72E+04	2.55E-05	1.67E-07	1.25E-07	7.84E-08	2.58E+00	5.38E-01	1.48E+00	2.28E+00	6.43E-01	2.55E-03	
Praseodymium (59)	Pr-148	1.59E+05	4.36E-06	0.00E+00	0.00E+00	0.00E+00	6.01E+00	1.15E+00	3.23E+00	5.14E+00	1.25E+00	5.64E-03	
Praseodymium (59)	Pr-148m	1.81E+05	3.82E-06	0.00E+00	0.00E+00	0.00E+00	5.27E+00	1.11E+00	3.10E+00	4.74E+00	1.23E+00	5.10E-03	
Platinum (78)	Pt-184	2.11E+04	3.29E-05	1.44E-07	1.11E-07	1.13E-07	3.31E+00	7.71E-01	2.09E+00	3.06E+00	7.81E-01	3.53E-03	
Platinum (78)	Pt-186	2.92E+03	2.37E-04	5.18E-07	4.03E-07	3.13E-07	3.59E+00	7.51E-01	2.11E+00	3.21E+00	7.52E-01	3.49E-03	
Platinum (78)	Pt-187	2.58E+03	2.68E-04	4.14E-07	3.16E-07	3.07E-07	3.06E+00	6.65E-01	1.83E+00	2.76E+00	6.75E-01	3.11E-03	
Platinum (78)	Pt-188	2.48E+01	2.79E-02	4.07E-06	3.13E-06	8.44E-06	7.85E-01	2.07E-01	5.42E-01	7.51E-01	2.15E-01	9.39E-04	
Platinum (78)	Pt-189	5.58E+02	1.24E-03	9.58E-07	7.29E-07	7.62E-07	2.35E+00	5.17E-01	1.41E+00	2.11E+00	5.25E-01	2.41E-03	
Platinum (78)	Pt-190	1.07E-12	6.50E+11	3.47E-05	2.57E-05	2.06E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Platinum (78)	Pt-191	9.03E+01	7.68E-03	1.81E-06	1.37E-06	1.56E-06	1.23E+00	3.04E-01	8.03E-01	1.15E+00	3.16E-01	1.38E-03	
Platinum (78)	Pt-193	1.39E-02	5.00E+01	1.82E-07	1.32E-07	2.69E-06	4.37E-06	4.37E-06	4.37E-06	4.37E-06	1.25E-04	3.30E-08	
Platinum (78)	Pt-193m	5.84E+01	1.19E-02	2.33E-06	1.69E-06	4.00E-06	2.19E-02	9.13E-03	1.94E-02	2.19E-02	1.06E-02	4.30E-05	
Platinum (78)	Pt-195m	6.29E+01	1.10E-02	3.27E-06	2.39E-06	4.77E-06	1.66E-01	6.43E-02	1.42E-01	1.66E-01	7.25E-02	2.86E-04	
Platinum (78)	Pt-197	3.05E+02	2.27E-03	2.20E-06	1.60E-06	1.59E-06	7.42E-02	2.35E-02	5.73E-02	7.29E-02	2.83E-02	1.16E-04	
Platinum (78)	Pt-197m	3.82E+03	1.82E-04	4.29E-07	3.14E-07	3.40E-07	3.04E-01	8.11E-02	2.09E-01	2.90E-01	8.50E-02	3.81E-04	
Platinum (78)	Pt-199	1.18E+04	5.86E-05	1.98E-07	1.47E-07	1.25E-07	1.08E+00	2.32E-01	6.46E-01	9.84E-01	2.88E-01	1.08E-03	
Platinum (78)	Pt-200	4.86E+02	1.43E-03	5.96E-06	4.33E-06	2.64E-06	2.02E-01	5.87E-02	1.48E-01	1.96E-01	6.31E-02	2.72E-04	
Platinum (78)	Pt-202	1.38E+02	5.02E-03	2.25E-05	1.63E-05	9.66E-06	1.91E-02	1.16E-02	1.58E-02	1.86E-02	9.11E-02	5.87E-05	
Plutonium (94)	Pu-232	1.08E+04	6.41E-05	6.81E-07	5.07E-07	9.58E-05	1.92E-01	5.98E-02	1.51E-01	1.92E-01	6.21E-02	2.70E-04	
Plutonium (94)	Pu-234	6.90E+02	1.00E-03	7.70E-07	5.62E-07	9.51E-05	2.09E-01	6.46E-02	1.64E-01	2.09E-01	6.75E-02	2.92E-04	
Plutonium (94)	Pu-235	1.44E+04	4.81E-05	1.09E-08	8.36E-09	7.22E-09	3.04E-01	8.91E-02	2.28E-01	2.99E-01	9.33E-02	4.04E-04	
Plutonium (94)	Pu-236	2.42E-01	2.86E+00	4.07E-04	3.29E-04	4.22E-02	1.72E-04	1.09E-04	1.52E-04	1.70E-04	7.82E-04	5.06E-07	
Plutonium (94)	Pu-237	5.60E+00	1.24E-01	5.59E-07	4.14E-07	1.61E-06	1.47E-01	4.63E-02	1.16E-01	1.47E-01	4.99E-02	2.09E-04	
Plutonium (94)	Pu-238	7.90E-03	8.77E+01	9.73E-04	8.44E-04	4.07E-01	1.11E-04	8.37E-05	1.03E-04	1.11E-04	7.00E-04	3.92E-07	
Plutonium (94)	Pu-239	2.87E-05	2.41E+04	1.07E-03	9.29E-04	4.48E-01	2.76E-04	9.66E-05	2.02E-04	2.67E-04	3.58E-04	4.40E-07	
Plutonium (94)	Pu-240	1.06E-04	6.56E+03	1.07E-03	9.29E-04	4.48E-01	1.13E-04	8.24E-05	1.04E-04	1.12E-04	6.64E-04	3.84E-07	
Plutonium (94)	Pu-241	4.83E-02	1.44E+01	1.93E-05	1.75E-05	8.51E-03	5.23E-06	1.59E-06	4.03E-06	5.21E-06	1.67E-06	7.18E-09	
Plutonium (94)	Pu-242	1.85E-06	3.75E+05	1.01E-03	8.84E-04	4.26E-01	5.64E-04	1.51E-04	3.21E-04	4.78E-04	6.50E-04	7.51E-07	
Plutonium (94)	Pu-243	1.22E+03	5.66E-04	4.33E-07	3.16E-07	3.63E-07	7.15E-02	2.35E-02	5.64E-02	7.04E-02	2.65E-02	1.13E-04	
Plutonium (94)	Pu-244	8.66E-09	8.00E+07	1.01E-03	8.81E-04	4.18E-01	1.23E-01	2.17E-02	6.24E-02	1.01E-01	2.24E-02	1.13E-04	
Plutonium (94)	Pu-245	5.78E+02	1.20E-03	3.46E-06	2.53E-06	1.87E-06	2.17E+00	4.48E-01	1.27E+00	1.94E+00	4.57E-01	2.11E-03	
Plutonium (94)	Pu-246	2.33E+01	2.97E-02	1.41E-05	1.04E-05	1.92E-05	5.23E-01	1.40E-01	3.70E-01	5.10E-01	1.46E-01	6.34E-04	
Radium (88)	Ra-219	2.19E+09	3.17E-10	0.00E+00	0.00E+00	0.00E+00	8.35E-01	1.89E-01	5.29E-01	7.83E-01	1.86E-01	8.61E-04	
Radium (88)	Ra-220	1.22E+09	5.68E-10	0.00E+00	0.00E+00	0.00E+00	2.52E-02	5.31E-03	1.51E-02	2.32E-02	5.21E-03	2.42E-05	
Radium (88)	Ra-221	7.81E+05	8.88E-07	0.00E+00	0.00E+00	0.00E+00	1.36E-01	3.75E-02	9.90E-02	1.33E-01	3.82E-02	1.72E-04	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Radium (88)	Ra-222	5.75E+05	1.20E-06	0.00E+00	0.00E+00	0.00E+00	4.71E-02	1.03E-02	2.95E-02	4.41E-02	1.01E-02	4.72E-05	
Radium (88)	Ra-223	2.21E+01	3.13E-02	8.03E-04	3.81E-04	3.47E-02	5.79E-01	1.48E-01	3.96E-01	5.55E-01	1.48E-01	6.70E-04	
Radium (88)	Ra-224	6.91E+01	1.00E-02	4.66E-04	2.39E-04	1.35E-02	4.95E-02	1.15E-02	3.25E-02	4.74E-02	1.12E-02	5.27E-05	
Radium (88)	Ra-225	1.70E+01	4.08E-02	8.81E-04	3.69E-04	3.11E-02	8.91E-03	6.46E-03	8.87E-03	8.91E-03	1.29E-02	2.88E-05	
Radium (88)	Ra-226	4.33E-04	1.60E+03	1.68E-03	1.04E-03	3.81E-02	3.18E-02	7.92E-03	2.19E-02	3.10E-02	7.81E-03	3.63E-05	
Radium (88)	Ra-227	8.63E+03	8.03E-05	4.11E-07	3.03E-07	8.95E-07	7.10E-01	1.59E-01	4.43E-01	6.59E-01	1.98E-01	7.44E-04	
Radium (88)	Ra-228	1.21E-01	5.75E+00	5.92E-03	2.58E-03	6.33E-02	6.58E-05	6.59E-05	6.58E-05	6.58E-05	8.58E-04	3.37E-07	
Radium (88)	Ra-230	3.92E+03	1.77E-04	8.92E-07	6.66E-07	5.00E-07	3.44E-01	8.37E-02	2.26E-01	3.25E-01	8.81E-02	3.89E-04	
Rubidium (37)	Rb-77	9.66E+04	7.17E-06	0.00E+00	0.00E+00	0.00E+00	8.61E+00	1.79E+00	5.01E+00	7.71E+00	1.89E+00	8.28E-03	
Rubidium (37)	Rb-78	2.06E+04	3.36E-05	3.44E-07	2.62E-07	1.31E-07	2.60E+01	4.37E+00	1.27E+01	2.09E+01	4.29E+00	2.38E-02	
Rubidium (37)	Rb-78m	6.35E+04	1.09E-05	0.00E+00	0.00E+00	0.00E+00	1.92E+01	3.61E+00	1.03E+01	1.64E+01	3.64E+00	1.77E-02	
Rubidium (37)	Rb-79	1.59E+04	4.36E-05	2.43E-07	1.84E-07	1.27E-07	7.92E+00	1.65E+00	4.67E+00	7.15E+00	1.71E+00	7.61E-03	
Rubidium (37)	Rb-80	6.54E+05	1.06E-06	0.00E+00	0.00E+00	0.00E+00	6.74E+00	1.43E+00	3.98E+00	6.11E+00	1.55E+00	6.47E-03	
Rubidium (37)	Rb-81	1.33E+03	5.22E-04	2.33E-07	1.81E-07	3.09E-07	2.76E+00	5.70E-01	1.63E+00	2.50E+00	5.73E-01	2.63E-03	
Rubidium (37)	Rb-81m	1.19E+04	5.80E-05	4.63E-08	3.50E-08	7.10E-08	1.24E-01	2.65E-02	7.32E-02	1.11E-01	2.84E-02	1.25E-04	
Rubidium (37)	Rb-82	2.86E+05	2.42E-06	0.00E+00	0.00E+00	0.00E+00	6.22E+00	1.30E+00	3.66E+00	5.62E+00	1.41E+00	5.94E-03	
Rubidium (37)	Rb-82m	9.38E+02	7.39E-04	6.03E-07	4.96E-07	6.59E-07	1.70E+01	3.27E+00	9.38E+00	1.48E+01	3.20E+00	1.56E-02	
Rubidium (37)	Rb-83	2.93E+00	2.36E-01	7.92E-06	6.55E-06	5.77E-06	2.67E+00	5.49E-01	1.57E+00	2.41E+00	5.42E-01	2.52E-03	
Rubidium (37)	Rb-84	7.72E+00	8.98E-02	1.30E-05	1.04E-05	1.20E-05	5.19E+00	1.02E+00	2.91E+00	4.58E+00	1.02E+00	4.82E-03	
Rubidium (37)	Rb-84m	1.80E+04	3.85E-05	3.39E-08	2.63E-08	3.74E-08	1.94E+00	4.28E-01	1.22E+00	1.82E+00	4.19E-01	1.96E-03	
Rubidium (37)	Rb-86	1.36E+01	5.11E-02	1.41E-05	1.04E-05	1.95E-05	5.81E-01	1.16E-01	3.16E-01	4.97E-01	1.93E-01	5.70E-04	
Rubidium (37)	Rb-86m	3.58E+05	1.93E-06	0.00E+00	0.00E+00	0.00E+00	3.03E+00	6.20E-01	1.77E+00	2.73E+00	6.11E-01	2.85E-03	
Rubidium (37)	Rb-87	1.41E-11	4.92E+10	7.59E-06	5.66E-06	6.22E-05	1.35E-04	5.73E-05	1.15E-04	1.34E-04	9.22E-05	4.17E-06	
Rubidium (37)	Rb-88	2.05E+04	3.38E-05	4.51E-07	3.36E-07	1.23E-07	4.28E+00	7.70E-01	2.13E+00	3.47E+00	8.74E-01	3.93E-03	
Rubidium (37)	Rb-89	2.40E+04	2.88E-05	2.20E-07	1.67E-07	9.77E-08	1.41E+01	2.47E+00	7.10E+00	1.16E+01	2.48E+00	1.27E-02	
Rubidium (37)	Rb-90	1.38E+05	5.01E-06	0.00E+00	0.00E+00	0.00E+00	1.38E+01	2.15E+00	6.20E+00	1.05E+01	2.15E+00	1.26E-02	
Rubidium (37)	Rb-90m	8.47E+04	8.18E-06	0.00E+00	0.00E+00	0.00E+00	2.09E+01	3.47E+00	1.01E+01	1.67E+01	3.45E+00	1.90E-02	
Rhenium (75)	Re-178	2.76E+04	2.51E-05	1.36E-07	1.03E-07	7.03E-08	1.02E+01	1.84E+00	5.29E+00	8.48E+00	1.85E+00	9.54E-03	
Rhenium (75)	Re-179	1.87E+04	3.71E-05	6.22E-08	4.85E-08	4.88E-08	5.98E+00	1.18E+00	3.36E+00	5.23E+00	1.17E+00	5.72E-03	
Rhenium (75)	Re-180	1.49E+05	4.64E-06	0.00E+00	0.00E+00	0.00E+00	6.76E+00	1.33E+00	3.75E+00	5.88E+00	1.32E+00	6.35E-03	
Rhenium (75)	Re-181	3.05E+02	2.27E-03	2.10E-06	1.57E-06	1.16E-06	4.17E+00	8.78E-01	2.45E+00	3.74E+00	8.77E-01	4.11E-03	
Rhenium (75)	Re-182	9.49E+01	7.31E-03	6.92E-06	5.29E-06	5.48E-06	9.79E+00	1.94E+00	5.47E+00	8.52E+00	1.93E+00	9.46E-03	
Rhenium (75)	Re-182m	4.78E+02	1.45E-03	1.39E-06	1.07E-06	9.47E-07	6.95E+00	1.32E+00	3.74E+00	5.90E+00	1.31E+00	6.53E-03	
Rhenium (75)	Re-183	3.61E+00	1.92E-01	4.85E-06	3.57E-06	1.46E-05	4.58E-01	1.45E-01	3.47E-01	4.48E-01	1.60E-01	6.46E-04	
Rhenium (75)	Re-184	6.66E+00	1.04E-01	4.77E-06	3.74E-06	9.51E-06	4.91E+00	9.81E-01	2.76E+00	4.32E+00	9.76E-01	4.66E-03	
Rhenium (75)	Re-184m	1.50E+00	4.63E-01	7.33E-06	5.48E-06	4.14E-05	1.87E+00	4.09E-01	1.12E+00	1.68E+00	4.11E-01	1.91E-03	
Rhenium (75)	Re-186	6.80E+01	1.02E-02	7.36E-06	5.29E-06	4.85E-06	7.17E-02	2.24E-02	5.44E-02	7.06E-02	1.57E-02	1.16E-04	
Rhenium (75)	Re-186m	3.47E-06	2.00E+05	1.12E-05	8.25E-06	2.38E-04	2.43E-02	1.16E-02	2.22E-02	2.43E-02	1.53E-02	4.97E-05	
Rhenium (75)	Re-187	1.68E-11	4.12E+10	2.44E-08	1.77E-08	1.58E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Rhenium (75)	Re-188	3.57E+02	1.94E-03	7.10E-06	5.03E-06	2.47E-06	3.29E-01	8.28E-02	2.07E-01	3.03E-01	1.73E-01	3.84E-04	
Rhenium (75)	Re-188m	1.96E+04	3.54E-05	1.54E-07	1.10E-07	6.22E-08	1.50E-01	6.03E-02	1.30E-01	1.50E-01	6.94E-02	2.64E-04	
Rhenium (75)	Re-189	2.50E+02	2.77E-03	3.85E-06	2.75E-06	1.87E-06	2.60E-01	6.20E-02	1.70E-01	2.47E-01	8.35E-02	2.98E-04	
Rhenium (75)	Re-190	1.17E+05	5.90E-06	0.00E+00	0.00E+00	0.00E+00	7.34E+00	1.51E+00	4.30E+00	6.61E+00	1.57E+00	7.05E-03	
Rhenium (75)	Re-190m	1.90E+03	3.65E-04	1.86E-06	1.35E-06	9.03E-07	4.95E+00	1.04E+00	2.93E+00	4.48E+00	1.07E+00	4.82E-03	
Rhodium (45)	Rh-100	2.92E+02	2.37E-03	3.14E-06	2.51E-06	1.54E-06	1.70E+01	2.97E+00	8.61E+00	1.40E+01	2.88E+00	1.54E-02	
Rhodium (45)	Rh-100m	7.92E+04	8.75E-06	0.00E+00	0.00E+00	0.00E+00	2.35E-01	4.93E-02	1.33E-01	2.05E-01	6.02E-02	2.37E-04	
Rhodium (45)	Rh-101	2.10E-01	3.30E+00	2.55E-06	2.04E-06	2.06E-05	1.21E+00	2.99E-01	8.28E-01	1.17E+00	3.00E-01	1.37E-03	
Rhodium (45)	Rh-101m	5.83E-01	1.19E-02	1.01E-06	7.77E-07	8.81E-07	1.41E+00	3.10E-01	8.82E-01	1.32E+00	3.10E-01	1.41E-03	
Rhodium (45)	Rh-102	1.22E+00	5.67E-01	5.88E-06	4.40E-06	2.96E-05	2.76E+00	5.64E-01	1.61E+00	2.48E+00	5.77E-01	2.62E-03	
Rhodium (45)	Rh-102m	1.85E-01	3.74E+00	1.23E-05	1.02E-05	7.88E-05	1.23E+01	2.41E+00	6.89E+00	1.08E+01	2.37E+00	1.14E-02	
Rhodium (45)	Rh-103m	6.49E+03	1.07E-04	1.89E-08	1.39E-08	1.15E-08	1.58E-04	1.52E-04	1.58E-04	1.58E-04	9.66E-04	6.55E-07	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Rhodium (45)	Rh-104	5.17E+05	1.34E-06	0.00E+00	0.00E+00	0.00E+00	1.13E-01	3.94E-02	7.53E-02	1.04E-01	1.50E-01	1.63E-04	
Rhodium (45)	Rh-104m	8.39E+04	8.26E-06	0.00E+00	0.00E+00	0.00E+00	5.17E-02	2.50E-02	4.61E-02	5.12E-02	4.01E-02	1.07E-04	
Rhodium (45)	Rh-105	1.72E+02	4.04E-03	1.86E-06	1.36E-06	1.49E-06	3.96E-01	8.72E-02	2.48E-01	3.72E-01	8.63E-02	4.05E-04	
Rhodium (45)	Rh-106	7.33E+05	9.45E-07	0.00E+00	0.00E+00	0.00E+00	1.25E+00	2.80E-01	7.34E-01	1.12E+00	4.04E-01	1.25E-03	
Rhodium (45)	Rh-106m	2.78E+03	2.49E-04	8.07E-07	6.22E-07	4.88E-07	1.67E+01	3.19E+00	9.15E+00	1.45E+01	3.14E+00	1.54E-02	
Rhodium (45)	Rh-107	1.68E+04	4.13E-05	1.18E-07	8.84E-08	7.22E-08	1.63E+00	3.57E-01	1.01E+00	1.52E+00	3.95E-01	1.65E-03	
Rhodium (45)	Rh-108	1.30E+06	5.33E-07	0.00E+00	0.00E+00	0.00E+00	1.89E+00	4.30E-01	1.13E+00	1.71E+00	5.60E-01	1.88E-03	
Rhodium (45)	Rh-109	2.73E+05	2.54E-06	0.00E+00	0.00E+00	0.00E+00	1.55E+00	3.57E-01	9.81E-01	1.45E+00	4.57E-01	1.61E-03	
Rhodium (45)	Rh-94	3.10E+05	2.24E-06	0.00E+00	0.00E+00	0.00E+00	2.30E+01	4.30E+00	1.22E+01	1.94E+01	4.33E+00	2.11E-02	
Rhodium (45)	Rh-95	7.26E+04	9.55E-06	0.00E+00	0.00E+00	0.00E+00	1.54E+01	2.84E+00	8.16E+00	1.31E+01	2.86E+00	1.41E-02	
Rhodium (45)	Rh-95m	1.86E+05	3.73E-06	0.00E+00	0.00E+00	0.00E+00	5.42E+00	9.77E-01	2.82E+00	4.52E+00	9.63E-01	5.01E-03	
Rhodium (45)	Rh-96	3.68E+04	1.88E-05	0.00E+00	0.00E+00	0.00E+00	2.30E+01	4.41E+00	1.26E+01	2.00E+01	4.41E+00	2.11E-02	
Rhodium (45)	Rh-96m	2.41E+05	2.87E-06	0.00E+00	0.00E+00	0.00E+00	7.66E+00	1.43E+00	4.09E+00	6.54E+00	1.45E+00	7.04E-03	
Rhodium (45)	Rh-97	1.19E+04	5.84E-05	2.29E-07	1.75E-07	1.05E-07	8.22E+00	1.62E+00	4.63E+00	7.25E+00	1.66E+00	7.71E-03	
Rhodium (45)	Rh-97m	7.88E+03	8.79E-05	2.22E-07	1.74E-07	1.22E-07	1.37E+01	2.35E+00	6.86E+00	1.12E+01	2.30E+00	1.24E-02	
Rhodium (45)	Rh-98	4.19E+04	1.66E-05	0.00E+00	0.00E+00	0.00E+00	1.04E+01	2.07E+00	5.90E+00	9.19E+00	2.16E+00	9.74E-03	
Rhodium (45)	Rh-99	1.57E+01	4.41E-02	2.73E-06	2.09E-06	5.22E-06	2.91E+00	6.11E-01	1.73E+00	2.63E+00	6.11E-01	2.83E-03	
Rhodium (45)	Rh-99m	1.29E+03	5.37E-04	3.13E-07	2.46E-07	1.82E-07	3.55E+00	7.17E-01	2.05E+00	3.18E+00	7.11E-01	3.37E-03	
Radon (86)	Rn-207	3.94E+04	1.76E-05	0.00E+00	0.00E+00	0.00E+00	5.36E+00	1.10E+00	3.12E+00	4.82E+00	1.11E+00	5.15E-03	
Radon (86)	Rn-209	1.28E+04	5.42E-05	0.00E+00	0.00E+00	0.00E+00	6.76E+00	1.32E+00	3.75E+00	5.88E+00	1.30E+00	6.39E-03	
Radon (86)	Rn-210	2.53E+03	2.74E-04	0.00E+00	0.00E+00	0.00E+00	3.29E-01	6.74E-02	1.91E-01	2.93E-01	6.67E-02	3.16E-04	
Radon (86)	Rn-211	4.16E+02	1.67E-03	0.00E+00	0.00E+00	0.00E+00	1.09E+01	2.07E+00	5.94E+00	9.40E+00	2.03E+00	1.01E-02	
Radon (86)	Rn-212	1.52E+04	4.55E-05	0.00E+00	0.00E+00	0.00E+00	1.92E-03	3.83E-04	1.09E-03	1.71E-03	3.78E-04	1.79E-06	
Radon (86)	Rn-215	9.50E+12	7.29E-14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Radon (86)	Rn-216	4.86E+11	1.43E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Radon (86)	Rn-217	4.05E+10	1.71E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Radon (86)	Rn-218	6.24E+08	1.11E-09	0.00E+00	0.00E+00	0.00E+00	4.26E-03	8.57E-04	2.45E-03	3.81E-03	8.46E-04	3.97E-06	
Radon (86)	Rn-219	5.52E+06	1.26E-07	0.00E+00	0.00E+00	0.00E+00	2.97E-01	6.58E-02	1.86E-01	2.78E-01	6.43E-02	2.99E-04	
Radon (86)	Rn-220	3.93E+05	1.76E-06	0.00E+00	0.00E+00	8.18E-07	3.47E-03	7.14E-04	2.04E-03	3.14E-03	7.03E-04	3.28E-06	
Radon (86)	Rn-222	6.62E+01	1.05E-02	0.00E+00	0.00E+00	6.55E-06	2.13E-03	4.41E-04	1.26E-03	1.94E-03	4.35E-04	2.02E-06	
Radon (86)	Rn-223	1.50E+04	4.62E-05	0.00E+00	0.00E+00	0.00E+00	1.86E+00	3.85E-01	1.08E+00	1.66E+00	4.44E-01	1.82E-03	
Ruthenium (44)	Ru-103	6.44E+00	1.08E-01	3.48E-06	2.64E-06	1.17E-05	2.71E+00	5.62E-01	1.60E+00	2.47E+00	5.54E-01	2.58E-03	
Ruthenium (44)	Ru-105	1.37E+03	5.07E-04	1.39E-06	1.03E-06	8.58E-07	4.18E+00	8.44E-01	2.41E+00	3.74E+00	8.74E-01	3.96E-03	
Ruthenium (44)	Ru-106	6.77E-01	1.02E+00	3.55E-05	2.60E-05	2.68E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Ruthenium (44)	Ru-107	9.71E+04	7.13E-06	0.00E+00	0.00E+00	0.00E+00	2.05E+00	4.15E-01	1.15E+00	1.79E+00	5.17E-01	1.97E-03	
Ruthenium (44)	Ru-108	8.01E+04	8.66E-06	0.00E+00	0.00E+00	0.00E+00	2.65E-01	7.14E-02	1.89E-01	2.60E-01	1.23E-01	3.41E-04	
Ruthenium (44)	Ru-92	9.98E+04	6.94E-06	0.00E+00	0.00E+00	0.00E+00	1.15E+01	2.30E+00	6.54E+00	1.01E+01	2.34E+00	1.10E-02	
Ruthenium (44)	Ru-94	7.03E+03	9.86E-05	4.63E-07	3.52E-07	2.56E-07	2.80E+00	5.72E-01	1.63E+00	2.52E+00	5.67E-01	2.66E-03	
Ruthenium (44)	Ru-95	3.69E+03	1.88E-04	2.87E-07	2.28E-07	1.96E-07	7.14E+00	1.37E+00	3.94E+00	6.22E+00	1.36E+00	6.63E-03	
Ruthenium (44)	Ru-97	8.72E+01	7.95E-03	7.18E-07	5.55E-07	5.11E-07	1.10E+00	2.54E-01	7.17E-01	1.05E+00	2.54E-01	1.16E-03	
Sulfur (16)	S-35	2.89E+00	2.40E-01	6.44E-07	4.85E-07	7.55E-06	1.22E-05	6.97E-06	1.13E-05	1.22E-05	1.55E-05	3.58E-07	
Sulphur (16)	S-37	7.21E+04	9.61E-06	0.00E+00	0.00E+00	0.00E+00	2.00E+01	2.97E+00	8.80E+00	1.51E+01	2.90E+00	1.80E-02	
Sulfur (16)	S-38	2.14E+03	3.24E-04	1.61E-06	1.26E-06	1.31E-06	1.11E+01	1.81E+00	5.29E+00	8.82E+00	1.78E+00	9.89E-03	
Antimony (51)	Sb-111	2.91E+05	2.38E-06	0.00E+00	0.00E+00	0.00E+00	8.20E+00	1.72E+00	4.82E+00	7.40E+00	1.81E+00	7.89E-03	
Antimony (51)	Sb-113	5.46E+04	1.27E-05	0.00E+00	0.00E+00	0.00E+00	7.01E+00	1.45E+00	4.09E+00	6.31E+00	1.51E+00	6.67E-03	
Antimony (51)	Sb-114	1.04E+05	6.64E-06	0.00E+00	0.00E+00	0.00E+00	1.61E+01	3.03E+00	8.65E+00	1.38E+01	3.05E+00	1.48E-02	
Antimony (51)	Sb-115	1.13E+04	6.11E-05	1.17E-07	8.95E-08	6.03E-08	4.84E+00	9.99E-01	2.84E+00	4.37E+00	1.02E+00	4.60E-03	
Antimony (51)	Sb-116	2.31E+04	3.01E-05	1.47E-07	1.12E-07	6.51E-08	1.38E+01	2.50E+00	7.23E+00	1.16E+01	2.51E+00	1.26E-02	
Antimony (51)	Sb-116m	6.04E+03	1.15E-04	3.01E-07	2.41E-07	2.09E-07	1.82E+01	3.42E+00	9.83E+00	1.56E+01	3.38E+00	1.67E-02	
Antimony (51)	Sb-117	2.17E+03	3.20E-04	8.77E-08	6.77E-08	7.73E-08	7.43E-01	1.85E-01	5.04E-01	7.14E-01	1.94E-01	8.44E-04	
Antimony (51)	Sb-118	1.01E+05	6.85E-06	0.00E+00	0.00E+00	0.00E+00	4.46E+00	9.32E-01	2.62E+00	4.03E+00	1.01E+00	4.26E-03	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Antimony (51)	Sb-118m	1.21E+03	5.71E-04	9.81E-07	7.92E-07	5.55E-07	1.53E+01	2.86E+00	8.22E+00	1.31E+01	2.82E+00	1.41E-02	
Antimony (51)	Sb-119	1.59E+02	4.36E-03	4.14E-07	3.03E-07	1.76E-07	4.48E-03	4.35E-03	4.50E-03	4.48E-03	1.82E-02	1.76E-05	
Antimony (51)	Sb-120	2.29E+04	3.02E-05	7.10E-08	5.37E-08	3.22E-08	2.45E+00	5.08E-01	1.43E+00	2.20E+00	5.46E-01	2.34E-03	
Antimony (51)	Sb-120m	4.39E+01	1.58E-02	5.77E-06	4.63E-06	4.70E-06	1.43E+01	2.71E+00	7.73E+00	1.23E+01	2.67E+00	1.32E-02	
Antimony (51)	Sb-122	9.29E+01	7.46E-03	8.55E-06	6.29E-06	4.88E-06	2.50E+00	5.12E-01	1.45E+00	2.24E+00	5.70E-01	2.38E-03	
Antimony (51)	Sb-122m	8.69E+04	7.97E-06	0.00E+00	0.00E+00	0.00E+00	1.03E-01	4.80E-02	9.32E-02	1.03E-01	6.87E-02	2.07E-04	
Antimony (51)	Sb-124	4.20E+00	1.65E-01	1.25E-05	9.44E-06	3.51E-05	1.13E+01	2.04E+00	5.90E+00	9.51E+00	2.02E+00	1.03E-02	
Antimony (51)	Sb-124m	2.35E+05	2.95E-06	0.00E+00	0.00E+00	0.00E+00	2.47E+00	4.99E-01	1.43E+00	2.20E+00	5.03E-01	2.31E-03	
Antimony (51)	Sb-124n	1.80E+04	3.84E-05	4.70E-08	3.59E-08	3.01E-08	1.68E-07	1.68E-07	1.68E-07	1.68E-07	6.65E-07	6.57E-10	
Antimony (51)	Sb-125	2.51E-01	2.76E+00	5.44E-06	4.26E-06	4.81E-05	2.32E+00	4.82E-01	1.37E+00	2.09E+00	4.84E-01	2.22E-03	
Antimony (51)	Sb-126	2.05E+01	3.38E-02	1.29E-05	9.92E-06	1.47E-05	1.56E+01	3.12E+00	8.91E+00	1.39E+01	3.10E+00	1.46E-02	
Antimony (51)	Sb-126m	1.90E+04	3.64E-05	1.85E-07	1.41E-07	8.84E-08	8.72E+00	1.76E+00	5.02E+00	7.79E+00	1.81E+00	8.20E-03	
Antimony (51)	Sb-127	6.57E+01	1.05E-02	8.36E-06	6.22E-06	7.88E-06	3.89E+00	7.85E-01	2.24E+00	3.47E+00	7.95E-01	3.67E-03	
Antimony (51)	Sb-128	6.74E+02	1.03E-03	3.92E-06	3.01E-06	1.95E-06	1.76E+01	3.49E+00	9.99E+00	1.56E+01	3.48E+00	1.65E-02	
Antimony (51)	Sb-128m	3.50E+04	1.98E-05	1.64E-07	1.25E-07	6.55E-08	1.09E+01	2.17E+00	6.18E+00	9.64E+00	2.24E+00	1.02E-02	
Antimony (51)	Sb-129	1.38E+03	5.02E-04	2.12E-06	1.58E-06	1.11E-06	8.70E+00	1.63E+00	4.69E+00	7.45E+00	1.62E+00	7.97E-03	
Antimony (51)	Sb-130	9.22E+03	7.52E-05	4.51E-07	3.47E-07	2.38E-07	1.89E+01	3.68E+00	1.05E+01	1.65E+01	3.68E+00	1.76E-02	
Antimony (51)	Sb-130m	5.78E+04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	1.59E+01	3.04E+00	8.72E+00	1.38E+01	3.11E+00	1.47E-02	
Antimony (51)	Sb-131	1.58E+04	4.38E-05	5.44E-07	4.00E-07	1.99E-07	1.26E+01	2.30E+00	6.61E+00	1.06E+01	2.29E+00	1.15E-02	
Antimony (51)	Sb-133	1.46E+05	4.76E-06	0.00E+00	0.00E+00	0.00E+00	1.71E+01	2.99E+00	8.67E+00	1.41E+01	2.97E+00	1.55E-02	
Scandium (21)	Sc-42m	3.52E+05	1.97E-06	0.00E+00	0.00E+00	0.00E+00	2.52E+01	4.69E+00	1.35E+01	2.15E+01	4.71E+00	2.31E-02	
Scandium (21)	Sc-43	1.56E+03	4.44E-04	1.08E-06	8.07E-07	5.51E-07	5.40E+00	1.12E+00	3.19E+00	4.89E+00	1.15E+00	5.15E-03	
Scandium (21)	Sc-44	1.53E+03	4.53E-04	1.75E-06	1.32E-06	8.25E-07	1.24E+01	2.39E+00	6.87E+00	1.09E+01	2.43E+00	1.15E-02	
Scandium (21)	Sc-44m	1.04E+02	6.69E-03	1.21E-05	9.07E-06	6.11E-06	1.41E+00	3.08E-01	8.78E-01	1.31E+00	2.99E-01	1.42E-03	
Scandium (21)	Sc-46	3.02E+00	2.30E-01	6.96E-06	5.44E-06	2.76E-05	1.20E+01	2.24E+00	6.44E+00	1.03E+01	2.20E+00	1.09E-02	
Scandium (21)	Sc-47	7.55E+01	9.18E-03	2.76E-06	2.02E-06	3.00E-06	4.63E-01	1.19E-01	3.27E-01	4.54E-01	1.17E-01	5.49E-04	
Scandium (21)	Sc-48	1.39E+02	4.99E-03	7.92E-06	6.18E-06	4.81E-06	2.04E+01	3.72E+00	1.07E+01	1.72E+01	3.64E+00	1.84E-02	
Scandium (21)	Sc-49	6.37E+03	1.09E-04	4.07E-07	3.00E-07	1.73E-07	3.61E-02	1.87E-02	2.73E-02	3.38E-02	1.18E-01	8.33E-05	
Scandium (21)	Sc-50	2.13E+05	3.25E-06	0.00E+00	0.00E+00	0.00E+00	1.98E+01	3.57E+00	1.03E+01	1.66E+01	3.62E+00	1.80E-02	
Selenium (34)	Se-70	8.86E+03	7.82E-05	4.63E-07	3.59E-07	3.01E-07	3.77E+00	8.00E-01	2.26E+00	3.44E+00	8.14E-01	3.67E-03	
Selenium (34)	Se-71	7.68E+04	9.02E-06	0.00E+00	0.00E+00	0.00E+00	9.10E+00	1.85E+00	5.21E+00	8.09E+00	1.94E+00	8.64E-03	
Selenium (34)	Se-72	3.01E+01	2.30E-02	3.05E-05	1.91E-05	1.54E-05	2.71E-02	1.74E-02	2.67E-02	2.71E-02	2.84E-02	7.12E-05	
Selenium (34)	Se-73	8.49E+02	8.16E-04	1.03E-06	7.66E-07	9.32E-07	5.75E+00	1.23E+00	3.46E+00	5.27E+00	1.26E+00	5.62E-03	
Selenium (34)	Se-73m	9.15E+03	7.57E-05	1.36E-07	1.01E-07	9.73E-08	1.43E+00	2.99E-01	8.46E-01	1.30E+00	3.12E-01	1.38E-03	
Selenium (34)	Se-75	2.11E+00	3.28E-01	1.24E-05	9.55E-06	5.40E-06	1.81E+00	4.24E-01	1.19E+00	1.73E+00	4.16E-01	1.94E-03	
Selenium (34)	Se-77m	1.26E+06	5.50E-07	0.00E+00	0.00E+00	0.00E+00	3.68E-01	9.40E-02	2.60E-01	3.61E-01	9.21E-02	4.32E-04	
Selenium (34)	Se-79	2.35E-06	2.95E+05	1.73E-05	1.01E-05	2.51E-05	1.27E-05	7.45E-06	1.19E-05	1.28E-05	1.70E-05	3.56E-07	
Selenium (34)	Se-79m	9.29E+04	7.46E-06	0.00E+00	0.00E+00	0.00E+00	2.86E-02	9.25E-03	2.30E-02	2.86E-02	1.00E-02	4.20E-05	
Selenium (34)	Se-81	1.97E+04	3.51E-05	1.34E-07	9.92E-08	6.36E-08	5.90E-02	1.86E-02	3.89E-02	5.47E-02	9.38E-02	9.53E-05	
Selenium (34)	Se-81m	6.36E+03	1.09E-04	2.65E-07	1.96E-07	2.20E-07	4.61E-02	1.42E-02	3.61E-02	4.60E-02	1.48E-02	6.47E-05	
Selenium (34)	Se-83	1.63E+04	4.24E-05	2.17E-07	1.68E-07	1.48E-07	1.57E+01	2.90E+00	8.37E+00	1.33E+01	2.86E+00	1.45E-02	
Selenium (34)	Se-83m	3.12E+05	2.22E-06	0.00E+00	0.00E+00	0.00E+00	6.05E+00	1.12E+00	3.19E+00	5.12E+00	1.22E+00	5.58E-03	
Selenium (34)	Se-84	1.17E+05	5.90E-06	0.00E+00	0.00E+00	0.00E+00	2.24E+00	4.84E-01	1.37E+00	2.07E+00	5.41E-01	2.22E-03	
Silicon (14)	Si-31	2.32E+03	2.99E-04	7.88E-07	5.92E-07	3.44E-07	1.98E-02	9.64E-03	1.47E-02	1.85E-02	8.33E-02	5.64E-05	
Silicon (14)	Si-32	5.25E-03	1.32E+02	2.96E-06	2.14E-06	4.29E-04	3.59E-05	1.77E-05	3.21E-05	3.59E-05	3.36E-05	1.23E-06	
Samarium (62)	Sm-139	1.42E+05	4.89E-06	0.00E+00	0.00E+00	0.00E+00	8.13E+00	1.66E+00	4.71E+00	7.27E+00	1.73E+00	7.75E-03	
Samarium (62)	Sm-140	2.46E+04	2.82E-05	4.77E-07	3.57E-07	1.45E-07	3.10E+00	6.18E-01	1.74E+00	2.71E+00	6.39E-01	2.95E-03	
Samarium (62)	Sm-141	3.57E+04	1.94E-05	1.90E-07	1.44E-07	7.03E-08	8.03E+00	1.59E+00	4.52E+00	7.06E+00	1.64E+00	7.55E-03	
Samarium (62)	Sm-141m	1.61E+04	4.30E-05	3.03E-07	2.31E-07	1.44E-07	1.11E+01	2.17E+00	6.18E+00	9.69E+00	2.17E+00	1.04E-02	
Samarium (62)	Sm-142	5.02E+03	1.38E-04	8.99E-07	6.70E-07	3.28E-07	4.71E-01	1.07E-01	2.84E-01	4.26E-01	1.24E-01	4.87E-04	
Samarium (62)	Sm-143	4.16E+04	1.66E-05	0.00E+00	0.00E+00	0.00E+00	2.88E+00	6.01E-01	1.68E+00	2.60E+00	6.56E-01	2.76E-03	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Samarium (62)	Sm-143m	3.31E+05	2.09E-06	0.00E+00	0.00E+00	0.00E+00	3.92E+00	7.70E-01	2.20E+00	3.46E+00	7.72E-01	3.63E-03	
Samarium (62)	Sm-145	7.44E-01	9.32E-01	1.06E-06	7.84E-07	1.22E-05	5.32E-02	3.53E-02	5.19E-02	5.32E-02	6.38E-02	1.44E-04	
Samarium (62)	Sm-146	6.73E-09	1.03E+08	2.59E-04	2.01E-04	9.88E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Samarium (62)	Sm-147	6.54E-12	1.06E+11	2.37E-04	1.83E-04	9.03E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Samarium (62)	Sm-148	9.90E-17	7.00E+15	2.04E-04	1.58E-04	7.77E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Samarium (62)	Sm-151	7.70E-03	9.00E+01	5.00E-07	3.66E-07	3.64E-05	7.25E-07	7.19E-07	7.25E-07	7.25E-07	4.45E-06	3.09E-09	
Samarium (62)	Sm-153	1.31E+02	5.31E-03	3.74E-06	2.72E-06	2.92E-06	1.46E-01	5.38E-02	1.18E-01	1.45E-01	7.31E-02	2.48E-04	
Samarium (62)	Sm-155	1.63E+04	4.24E-05	1.47E-07	1.09E-07	7.77E-08	3.66E-01	1.12E-01	2.76E-01	3.59E-01	1.81E-01	5.17E-04	
Samarium (62)	Sm-156	6.46E+02	1.07E-03	1.29E-06	9.47E-07	1.03E-06	4.61E-01	1.20E-01	3.21E-01	4.48E-01	1.25E-01	5.52E-04	
Samarium (62)	Sm-157	4.54E+04	1.53E-05	0.00E+00	0.00E+00	0.00E+00	2.19E+00	4.73E-01	1.31E+00	1.98E+00	5.65E-01	2.23E-03	
Tin (50)	Sn-106	1.90E+05	3.65E-06	0.00E+00	0.00E+00	0.00E+00	6.65E+00	1.34E+00	3.81E+00	5.92E+00	1.33E+00	6.31E-03	
Tin (50)	Sn-108	3.54E+04	1.96E-05	1.05E-07	8.14E-08	5.18E-08	3.51E+00	7.49E-01	2.13E+00	3.21E+00	7.48E-01	3.46E-03	
Tin (50)	Sn-109	2.02E+04	3.42E-05	8.81E-08	7.07E-08	5.33E-08	1.36E+01	2.39E+00	6.93E+00	1.12E+01	2.33E+00	1.23E-02	
Tin (50)	Sn-110	1.48E+03	4.69E-04	1.82E-06	1.36E-06	7.55E-07	1.38E+00	3.10E-01	8.80E-01	1.30E+00	3.13E-01	1.41E-03	
Tin (50)	Sn-111	1.03E+04	6.72E-05	1.03E-07	7.84E-08	5.66E-08	2.76E+00	5.38E-01	1.54E+00	2.41E+00	5.59E-01	2.58E-03	
Tin (50)	Sn-113	2.20E+00	3.15E-01	3.74E-06	2.77E-06	1.64E-05	2.97E-02	9.15E-03	2.04E-02	2.86E-02	1.99E-02	4.03E-05	
Tin (50)	Sn-113m	1.70E+04	4.07E-05	1.62E-08	1.21E-08	1.92E-08	3.59E-03	2.91E-03	3.46E-03	3.59E-03	1.09E-02	1.19E-05	
Tin (50)	Sn-117m	1.84E+01	3.77E-02	3.59E-06	2.64E-06	1.15E-05	6.00E-01	1.56E-01	4.22E-01	5.87E-01	1.64E-01	7.16E-04	
Tin (50)	Sn-119m	8.63E-01	8.03E-01	1.80E-06	1.31E-06	1.40E-05	2.75E-03	1.63E-03	2.75E-03	2.75E-03	1.15E-02	1.08E-05	
Tin (50)	Sn-121	2.25E+02	3.09E-03	1.17E-06	8.51E-07	1.05E-06	1.76E-04	6.99E-05	1.46E-04	1.75E-04	1.06E-04	4.65E-06	
Tin (50)	Sn-121m	1.58E-02	4.39E+01	1.96E-06	1.43E-06	5.88E-05	1.45E-03	1.28E-03	1.44E-03	1.45E-03	4.27E-03	6.20E-06	
Tin (50)	Sn-123	1.96E+00	3.54E-01	1.08E-05	7.81E-06	5.25E-05	5.31E-02	1.47E-02	3.18E-02	4.67E-02	7.66E-02	8.19E-05	
Tin (50)	Sn-123m	9.09E+03	7.62E-05	1.92E-07	1.42E-07	1.23E-07	5.96E-01	1.55E-01	4.20E-01	5.83E-01	2.05E-01	7.25E-04	
Tin (50)	Sn-125	2.62E+01	2.64E-02	1.55E-05	1.13E-05	1.47E-05	2.05E+00	3.90E-01	1.10E+00	1.75E+00	4.69E-01	1.91E-03	
Tin (50)	Sn-125m	3.83E+04	1.81E-05	0.00E+00	0.00E+00	0.00E+00	1.84E+00	4.07E-01	1.14E+00	1.71E+00	4.94E-01	1.87E-03	
Tin (50)	Sn-126	3.01E-06	2.30E+05	2.36E-05	1.78E-05	6.14E-04	1.30E-01	4.74E-02	1.09E-01	1.30E-01	5.63E-02	2.13E-04	
Tin (50)	Sn-127	2.89E+03	2.40E-04	9.77E-07	7.40E-07	6.14E-07	1.15E+01	2.11E+00	6.07E+00	9.73E+00	2.10E+00	1.05E-02	
Tin (50)	Sn-127m	8.82E+04	7.86E-06	0.00E+00	0.00E+00	0.00E+00	3.27E+00	6.71E-01	1.87E+00	2.90E+00	7.77E-01	3.12E-03	
Tin (50)	Sn-128	6.17E+03	1.12E-04	7.55E-07	5.70E-07	4.22E-07	3.01E+00	6.41E-01	1.80E+00	2.73E+00	6.63E-01	2.94E-03	
Tin (50)	Sn-129	1.63E+05	4.24E-06	0.00E+00	0.00E+00	0.00E+00	5.98E+00	1.17E+00	3.29E+00	5.19E+00	1.67E+00	5.56E-03	
Tin (50)	Sn-130	9.79E+04	7.08E-06	0.00E+00	0.00E+00	0.00E+00	5.01E+00	1.04E+00	2.93E+00	4.50E+00	1.07E+00	4.86E-03	
Tin (50)	Sn-130m	2.14E+05	3.23E-06	0.00E+00	0.00E+00	0.00E+00	5.19E+00	1.02E+00	2.84E+00	4.48E+00	1.13E+00	4.90E-03	
Strontium (38)	Sr-79	1.62E+05	4.28E-06	0.00E+00	0.00E+00	0.00E+00	6.44E+00	1.40E+00	3.87E+00	5.88E+00	1.52E+00	6.29E-03	
Strontium (38)	Sr-80	3.43E+03	2.02E-04	1.85E-06	1.40E-06	7.07E-07	2.35E+00	4.88E-01	1.39E+00	2.13E+00	4.83E-01	2.24E-03	
Strontium (38)	Sr-81	1.63E+04	4.24E-05	3.27E-07	2.48E-07	1.44E-07	7.57E+00	1.59E+00	4.48E+00	6.86E+00	1.67E+00	7.31E-03	
Strontium (38)	Sr-82	9.97E+00	6.95E-02	3.12E-05	2.29E-05	4.51E-05	9.38E-05	9.38E-05	9.38E-05	9.38E-05	1.78E-03	5.52E-07	
Strontium (38)	Sr-83	1.87E+02	3.70E-03	2.39E-06	1.90E-06	1.58E-06	4.63E+00	9.12E-01	2.62E+00	4.09E+00	9.12E-01	4.32E-03	
Strontium (38)	Sr-85	3.90E+00	1.78E-01	2.94E-06	2.04E-06	3.41E-06	2.71E+00	5.59E-01	1.59E+00	2.45E+00	5.52E-01	2.56E-03	
Strontium (38)	Sr-85m	5.39E+03	1.29E-04	2.79E-08	2.23E-08	1.93E-08	1.03E+00	2.41E-01	6.80E-01	9.88E-01	2.34E-01	1.10E-03	
Strontium (38)	Sr-87m	2.16E+03	3.21E-04	1.43E-07	1.12E-07	9.36E-08	1.68E+00	3.61E-01	1.03E+00	1.56E+00	3.54E-01	1.65E-03	
Strontium (38)	Sr-89	5.01E+00	1.38E-01	1.34E-05	9.51E-06	3.27E-05	1.52E-02	9.04E-03	1.25E-02	1.48E-02	8.04E-02	5.13E-05	
Strontium (38)	Sr-90	2.41E-02	2.88E+01	1.33E-04	1.02E-04	6.07E-04	6.46E-04	2.35E-04	5.08E-04	6.39E-04	1.92E-03	1.15E-05	
Strontium (38)	Sr-91	6.30E+02	1.10E-03	3.13E-06	2.43E-06	1.82E-06	4.18E+00	8.03E-01	2.30E+00	3.62E+00	8.59E-01	3.88E-03	
Strontium (38)	Sr-92	2.28E+03	3.04E-04	2.01E-06	1.55E-06	9.99E-07	8.29E+00	1.46E+00	4.24E+00	6.89E+00	1.43E+00	7.48E-03	
Strontium (38)	Sr-93	4.91E+04	1.41E-05	0.00E+00	0.00E+00	0.00E+00	1.36E+01	2.50E+00	7.23E+00	1.15E+01	2.54E+00	1.25E-02	
Strontium (38)	Sr-94	2.90E+05	2.39E-06	0.00E+00	0.00E+00	0.00E+00	8.95E+00	1.57E+00	4.56E+00	7.42E+00	1.64E+00	8.08E-03	
Tantalum (73)	Ta-170	5.39E+04	1.29E-05	0.00E+00	0.00E+00	0.00E+00	5.88E+00	1.25E+00	3.46E+00	5.29E+00	1.33E+00	5.70E-03	
Tantalum (73)	Ta-172	9.90E+03	7.00E-05	2.79E-07	2.13E-07	1.59E-07	9.73E+00	1.89E+00	5.34E+00	8.41E+00	1.89E+00	9.13E-03	
Tantalum (73)	Ta-173	1.93E+03	3.58E-04	5.33E-07	4.07E-07	3.47E-07	3.04E+00	6.18E-01	1.71E+00	2.65E+00	6.34E-01	2.99E-03	
Tantalum (73)	Ta-174	5.33E+03	1.30E-04	3.52E-07	2.66E-07	2.11E-07	5.42E+00	1.07E+00	3.03E+00	4.71E+00	1.10E+00	5.21E-03	
Tantalum (73)	Ta-175	5.78E+02	1.20E-03	1.12E-06	8.84E-07	6.62E-07	6.28E+00	1.19E+00	3.38E+00	5.34E+00	1.18E+00	5.94E-03	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Tantalum (73)	Ta-176	7.50E+02	9.24E-04	1.48E-06	1.17E-06	8.92E-07	1.37E+01	2.39E+00	6.93E+00	1.13E+01	2.34E+00	1.25E-02	
Tantalum (73)	Ta-177	1.07E+02	6.46E-03	5.40E-07	4.07E-07	4.51E-07	1.58E-01	5.79E-02	1.24E-01	1.52E-01	6.89E-02	2.53E-04	
Tantalum (73)	Ta-178	3.91E+04	1.77E-05	0.00E+00	0.00E+00	0.00E+00	4.89E-01	1.17E-01	2.95E-01	4.28E-01	1.27E-01	5.51E-04	
Tantalum (73)	Ta-178m	2.57E+03	2.69E-04	4.11E-07	3.15E-07	3.32E-07	5.49E+00	1.26E+00	3.49E+00	5.16E+00	1.26E+00	5.73E-03	
Tantalum (73)	Ta-179	3.81E-01	1.82E+00	2.95E-07	2.22E-07	2.02E-06	3.77E-02	1.91E-02	3.55E-02	3.77E-02	2.48E-02	8.13E-05	
Tantalum (73)	Ta-180	7.45E+02	9.31E-04	2.80E-07	2.06E-07	1.87E-07	8.13E-02	3.83E-02	7.42E-02	8.13E-02	4.89E-02	1.66E-04	
Tantalum (73)	Ta-182	2.21E+00	3.14E-01	7.36E-06	5.62E-06	4.22E-05	7.49E+00	1.41E+00	4.02E+00	6.39E+00	1.39E+00	6.98E-03	
Tantalum (73)	Ta-182m	2.30E+04	3.01E-05	6.03E-08	4.55E-08	9.62E-08	9.92E-01	2.69E-01	7.06E-01	9.66E-01	2.77E-01	1.23E-03	
Tantalum (73)	Ta-183	4.96E+01	1.40E-02	6.81E-06	5.00E-06	9.25E-06	1.20E+00	3.06E-01	8.16E-01	1.15E+00	3.16E-01	1.40E-03	
Tantalum (73)	Ta-184	6.98E+02	9.93E-04	3.31E-06	2.49E-06	1.89E-06	8.59E+00	1.76E+00	5.01E+00	7.70E+00	1.77E+00	8.26E-03	
Tantalum (73)	Ta-185	7.37E+03	9.40E-05	3.44E-07	2.55E-07	2.15E-07	6.37E-01	1.70E-01	4.39E-01	6.11E-01	2.51E-01	7.82E-04	
Tantalum (73)	Ta-186	3.47E+04	2.00E-05	1.72E-07	1.30E-07	7.92E-08	7.73E+00	1.62E+00	4.56E+00	6.97E+00	1.70E+00	7.51E-03	
Terbium (65)	Tb-146	9.50E+05	7.29E-07	0.00E+00	0.00E+00	0.00E+00	2.24E+01	4.02E+00	1.15E+01	1.86E+01	4.00E+00	2.03E-02	
Terbium (65)	Tb-147	3.70E+03	1.87E-04	5.99E-07	4.70E-07	3.26E-07	1.29E+01	2.41E+00	6.89E+00	1.10E+01	2.40E+00	1.19E-02	
Terbium (65)	Tb-147m	1.95E+05	3.56E-06	0.00E+00	0.00E+00	0.00E+00	1.17E+01	2.07E+00	6.01E+00	9.73E+00	2.07E+00	1.06E-02	
Terbium (65)	Tb-148	6.07E+04	1.14E-04	6.03E-07	4.59E-07	2.87E-07	1.41E+01	2.62E+00	7.51E+00	1.20E+01	2.64E+00	1.30E-02	
Terbium (65)	Tb-148m	1.66E+05	4.19E-06	0.00E+00	0.00E+00	0.00E+00	1.78E+01	3.53E+00	1.01E+01	1.57E+01	3.51E+00	1.66E-02	
Terbium (65)	Tb-149	1.47E+03	4.70E-04	8.88E-07	6.85E-07	1.80E-05	7.86E+00	1.49E+00	4.26E+00	6.74E+00	1.47E+00	7.33E-03	
Terbium (65)	Tb-149m	8.76E+04	7.91E-06	0.00E+00	0.00E+00	0.00E+00	7.73E+00	1.54E+00	4.37E+00	6.84E+00	1.55E+00	7.24E-03	
Terbium (65)	Tb-150	1.74E+03	3.97E-04	1.04E-06	8.07E-07	4.77E-07	1.50E+01	2.63E+00	7.60E+00	1.23E+01	2.58E+00	1.37E-02	
Terbium (65)	Tb-150m	6.28E+04	1.10E-05	0.00E+00	0.00E+00	0.00E+00	1.39E+01	2.84E+00	8.07E+00	1.25E+01	2.82E+00	1.31E-02	
Terbium (65)	Tb-151	3.45E+02	2.01E-03	1.72E-06	1.34E-06	1.10E-06	5.19E+00	1.09E+00	3.06E+00	4.67E+00	1.09E+00	5.07E-03	
Terbium (65)	Tb-151m	8.74E+05	7.93E-07	0.00E+00	0.00E+00	0.00E+00	3.68E-01	8.13E-02	2.20E-01	3.33E-01	8.53E-02	3.74E-04	
Terbium (65)	Tb-152	3.47E+02	2.00E-03	3.40E-06	2.59E-06	1.41E-06	8.78E+00	1.63E+00	4.67E+00	7.45E+00	1.62E+00	8.15E-03	
Terbium (65)	Tb-152m	8.67E+04	7.99E-06	0.00E+00	0.00E+00	0.00E+00	3.85E+00	8.31E-01	2.34E+00	3.51E+00	8.35E-01	3.83E-03	
Terbium (65)	Tb-153	1.08E+02	6.41E-03	1.40E-06	1.07E-06	9.77E-07	1.50E+00	3.42E-01	9.28E-01	1.37E+00	3.57E-01	1.58E-03	
Terbium (65)	Tb-154	2.82E+02	2.45E-03	2.93E-06	2.32E-06	1.59E-06	1.42E+01	2.43E+00	7.04E+00	1.15E+01	2.36E+00	1.30E-02	
Terbium (65)	Tb-155	4.75E+01	1.46E-02	1.30E-06	9.84E-07	1.30E-06	5.55E-01	1.65E-01	4.05E-01	5.40E-01	1.86E-01	7.36E-04	
Terbium (65)	Tb-156	4.73E+01	1.47E-02	5.48E-06	4.33E-06	5.33E-06	1.11E+01	2.11E+00	6.05E+00	9.56E+00	2.09E+00	1.04E-02	
Terbium (65)	Tb-156m	2.49E+02	2.79E-03	7.88E-07	6.11E-07	8.62E-07	4.39E-02	2.60E-02	4.28E-02	4.39E-02	3.82E-02	1.08E-04	
Terbium (65)	Tb-156n	1.15E+03	6.05E-04	4.29E-07	3.23E-07	4.74E-07	5.60E-03	2.69E-03	5.02E-03	5.60E-03	3.75E-03	1.16E-05	
Terbium (65)	Tb-157	9.76E-03	7.10E+01	1.95E-07	1.44E-07	1.27E-05	4.26E-03	2.82E-03	4.20E-03	4.26E-03	4.72E-03	1.15E-05	
Terbium (65)	Tb-158	3.85E-03	1.80E+02	5.37E-06	4.14E-06	4.07E-04	4.48E+00	8.76E-01	2.48E+00	3.90E+00	8.80E-01	4.22E-03	
Terbium (65)	Tb-160	3.50E+00	1.98E-01	7.96E-06	5.99E-06	3.39E-05	6.54E+00	1.25E+00	3.59E+00	5.66E+00	1.24E+00	6.07E-03	
Terbium (65)	Tb-161	3.66E+01	1.89E-02	3.77E-06	2.76E-06	5.88E-06	4.73E-02	2.35E-02	4.28E-02	4.71E-02	3.54E-02	1.07E-04	
Terbium (65)	Tb-162	4.79E+04	1.45E-05	0.00E+00	0.00E+00	0.00E+00	6.18E+00	1.24E+00	3.53E+00	5.49E+00	1.27E+00	5.88E-03	
Terbium (65)	Tb-163	1.87E+04	3.71E-05	1.04E-07	7.92E-08	7.51E-08	4.20E+00	8.93E-01	2.54E+00	3.87E+00	9.05E-01	4.10E-03	
Terbium (65)	Tb-164	1.21E+05	5.71E-06	0.00E+00	0.00E+00	0.00E+00	1.43E+01	2.71E+00	7.79E+00	1.23E+01	2.75E+00	1.33E-02	
Terbium (65)	Tb-165	1.73E+05	4.01E-06	0.00E+00	0.00E+00	0.00E+00	5.14E+00	9.38E-01	2.69E+00	4.32E+00	1.01E+00	4.72E-03	
Technetium (43)	Tc-101	2.57E+04	2.70E-05	9.25E-08	6.88E-08	5.33E-08	1.75E+00	3.85E-01	1.09E+00	1.63E+00	4.28E-01	1.77E-03	
Technetium (43)	Tc-102	4.14E+06	1.67E-07	0.00E+00	0.00E+00	0.00E+00	6.31E-01	1.68E-01	3.77E-01	5.59E-01	3.03E-01	6.83E-04	
Technetium (43)	Tc-102m	8.37E+04	8.28E-06	0.00E+00	0.00E+00	0.00E+00	1.51E+01	2.73E+00	7.86E+00	1.27E+01	2.74E+00	1.38E-02	
Technetium (43)	Tc-104	1.99E+04	3.48E-05	4.03E-07	3.02E-07	1.31E-07	1.40E+01	2.48E+00	7.14E+00	1.15E+01	2.54E+00	1.28E-02	
Technetium (43)	Tc-105	4.79E+04	1.45E-05	0.00E+00	0.00E+00	0.00E+00	4.56E+00	9.15E-01	2.56E+00	3.98E+00	1.01E+00	4.40E-03	
Technetium (43)	Tc-91	1.16E+05	5.97E-06	0.00E+00	0.00E+00	0.00E+00	1.53E+01	2.76E+00	7.94E+00	1.28E+01	2.82E+00	1.40E-02	
Technetium (43)	Tc-91m	1.10E+05	6.28E-06	0.00E+00	0.00E+00	0.00E+00	8.09E+00	1.68E+00	4.71E+00	7.27E+00	1.79E+00	7.71E-03	
Technetium (43)	Tc-92	8.57E+04	8.09E-06	0.00E+00	0.00E+00	0.00E+00	2.26E+01	4.30E+00	1.23E+01	1.94E+01	4.34E+00	2.09E-02	
Technetium (43)	Tc-93	2.21E+03	3.14E-04	3.27E-07	2.62E-07	2.07E-07	9.68E+00	1.70E+00	4.95E+00	8.03E+00	1.66E+00	8.71E-03	
Technetium (43)	Tc-93m	8.37E+03	8.28E-05	1.52E-07	1.20E-07	9.32E-08	5.98E+00	1.01E+00	2.93E+00	4.82E+00	9.71E-01	5.44E-03	
Technetium (43)	Tc-94	1.24E+03	5.57E-04	9.36E-07	7.59E-07	5.77E-07	1.54E+01	2.97E+00	8.54E+00	1.35E+01	2.93E+00	1.41E-02	
Technetium (43)	Tc-94m	7.00E+03	9.89E-05	5.03E-07	3.74E-07	2.08E-07	1.15E+01	2.19E+00	6.28E+00	9.94E+00	2.23E+00	1.06E-02	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Techneium (43)	Tc-95	3.04E+02	2.28E-03	8.36E-07	6.77E-07	4.92E-07	4.54E+00	8.84E-01	2.54E+00	3.98E+00	8.74E-01	4.19E-03	
Techneium (43)	Tc-95m	4.15E+00	1.67E-01	2.66E-06	2.11E-06	5.03E-06	3.75E+00	7.60E-01	2.17E+00	3.36E+00	7.52E-01	3.57E-03	
Techneium (43)	Tc-96	5.91E+01	1.17E-02	5.11E-06	4.18E-06	3.14E-06	1.45E+01	2.80E+00	8.03E+00	1.27E+01	2.76E+00	1.33E-02	
Techneium (43)	Tc-96m	7.07E+03	9.80E-05	5.85E-08	4.63E-08	3.36E-08	2.47E-01	4.67E-02	1.34E-01	2.13E-01	4.86E-02	2.27E-04	
Techneium (43)	Tc-97	2.67E-07	2.60E+06	3.50E-07	2.52E-07	7.03E-06	5.51E-04	5.55E-04	5.51E-04	5.51E-04	5.33E-03	2.58E-06	
Techneium (43)	Tc-97m	2.81E+00	2.47E-01	2.85E-06	2.03E-06	1.69E-05	1.52E-03	8.69E-04	1.33E-03	1.52E-03	5.11E-03	4.30E-06	
Techneium (43)	Tc-98	1.65E-07	4.20E+06	8.99E-06	6.88E-06	1.65E-04	8.07E+00	1.60E+00	4.58E+00	7.15E+00	1.57E+00	7.48E-03	
Techneium (43)	Tc-99	3.28E-06	2.11E+05	3.33E-06	2.38E-06	5.25E-05	1.10E-04	4.73E-05	9.40E-05	1.10E-04	7.66E-05	3.36E-06	
Techneium (43)	Tc-99m	1.01E+03	6.87E-04	1.08E-07	8.25E-08	8.62E-08	5.04E-01	1.35E-01	3.64E-01	4.97E-01	1.33E-01	6.15E-04	
Tellurium (52)	Te-113	2.14E+05	3.23E-06	0.00E+00	0.00E+00	0.00E+00	1.33E+01	2.52E+00	7.19E+00	1.14E+01	2.60E+00	1.23E-02	
Tellurium (52)	Te-114	2.40E+04	2.89E-05	3.22E-07	2.46E-07	1.41E-07	7.51E+00	1.39E+00	3.98E+00	6.37E+00	1.38E+00	6.91E-03	
Tellurium (52)	Te-115	6.28E+04	1.10E-05	0.00E+00	0.00E+00	0.00E+00	1.32E+01	2.52E+00	7.19E+00	1.14E+01	2.55E+00	1.23E-02	
Tellurium (52)	Te-115m	5.44E+04	1.27E-05	0.00E+00	0.00E+00	0.00E+00	1.56E+01	2.90E+00	8.31E+00	1.33E+01	2.90E+00	1.42E-02	
Tellurium (52)	Te-116	2.44E+03	2.84E-04	9.55E-07	7.33E-07	5.55E-07	3.75E-01	9.38E-02	2.43E-01	3.47E-01	1.13E-01	4.27E-04	
Tellurium (52)	Te-117	5.87E+03	1.18E-04	2.50E-07	1.95E-07	1.25E-07	9.25E+00	1.70E+00	4.89E+00	7.85E+00	1.70E+00	8.47E-03	
Tellurium (52)	Te-118	4.22E+01	1.64E-02	1.53E-05	1.12E-05	1.09E-05	4.63E-03	4.43E-03	4.63E-03	4.63E-03	1.66E-02	1.76E-05	
Tellurium (52)	Te-119	3.78E+02	1.83E-03	8.29E-07	6.62E-07	4.88E-07	4.32E+00	8.46E-01	2.41E+00	3.79E+00	8.43E-01	4.00E-03	
Tellurium (52)	Te-119m	5.38E+01	1.29E-02	3.32E-06	2.67E-06	2.71E-06	8.80E+00	1.64E+00	4.71E+00	7.49E+00	1.61E+00	8.14E-03	
Tellurium (52)	Te-121	1.32E+01	5.25E-02	2.09E-06	1.68E-06	2.42E-06	3.10E+00	6.37E-01	1.81E+00	2.80E+00	6.39E-01	2.93E-03	
Tellurium (52)	Te-121m	1.64E+00	4.22E-01	1.12E-05	8.73E-06	2.35E-05	9.94E-01	2.28E-01	6.39E-01	9.38E-01	2.31E-01	1.05E-03	
Tellurium (52)	Te-123	1.16E-15	6.00E+14	5.51E-06	5.03E-06	1.45E-05	8.03E-06	7.68E-06	8.05E-06	8.03E-06	2.89E-05	3.07E-08	
Tellurium (52)	Te-123m	2.12E+00	3.27E-01	6.92E-06	5.07E-06	2.05E-05	5.72E-01	1.49E-01	4.03E-01	5.60E-01	1.54E-01	6.78E-04	
Tellurium (52)	Te-125m	4.41E+00	1.57E-01	4.51E-06	3.22E-06	1.67E-05	1.11E-02	9.60E-03	1.09E-02	1.11E-02	3.13E-02	3.92E-05	
Tellurium (52)	Te-127	6.49E+02	1.07E-03	8.51E-07	6.29E-07	6.14E-07	2.67E-02	5.94E-03	1.65E-02	2.47E-02	1.23E-02	3.91E-05	
Tellurium (52)	Te-127m	2.32E+00	2.99E-01	1.26E-05	8.70E-06	4.00E-05	4.11E-03	3.10E-03	3.81E-03	4.05E-03	9.98E-03	1.31E-05	
Tellurium (52)	Te-129	5.23E+03	1.32E-04	3.15E-07	2.33E-07	1.57E-07	3.29E-01	7.30E-02	1.96E-01	2.99E-01	1.36E-01	3.49E-04	
Tellurium (52)	Te-129m	7.53E+00	9.21E-02	1.57E-05	1.10E-05	3.23E-05	1.77E-01	3.87E-02	1.02E-01	1.57E-01	6.82E-02	1.83E-04	
Tellurium (52)	Te-131	1.46E+04	4.76E-05	4.48E-07	3.22E-07	3.13E-07	2.24E+00	4.78E-01	1.33E+00	2.02E+00	5.52E-01	2.24E-03	
Tellurium (52)	Te-131m	2.02E+02	3.42E-03	9.95E-06	7.14E-06	1.16E-05	8.42E+00	1.62E+00	4.63E+00	7.32E+00	1.59E+00	7.81E-03	
Tellurium (52)	Te-132	7.89E+01	8.78E-03	1.98E-05	1.40E-05	2.45E-05	9.94E-01	2.39E-01	6.61E-01	9.55E-01	2.49E-01	1.09E-03	
Tellurium (52)	Te-133	2.91E+04	2.38E-05	3.74E-07	2.58E-07	2.69E-07	7.12E+00	1.34E+00	3.85E+00	6.09E+00	1.38E+00	6.62E-03	
Tellurium (52)	Te-133m	6.57E+03	1.05E-04	1.35E-06	9.25E-07	1.04E-06	1.09E+01	2.07E+00	5.94E+00	9.41E+00	2.06E+00	1.01E-02	
Tellurium (52)	Te-134	8.71E+03	7.95E-05	4.92E-07	3.63E-07	3.59E-07	4.67E+00	9.71E-01	2.76E+00	4.22E+00	9.64E-01	4.52E-03	
Thorium (90)	Th-223	3.64E+07	1.90E-08	0.00E+00	0.00E+00	0.00E+00	2.37E-01	7.17E-02	1.82E-01	2.34E-01	7.43E-02	3.25E-04	
Thorium (90)	Th-224	2.08E+07	3.33E-08	0.00E+00	0.00E+00	0.00E+00	1.02E-01	2.48E-02	6.89E-02	9.83E-02	2.45E-02	1.14E-04	
Thorium (90)	Th-226	1.19E+04	5.82E-05	1.76E-06	1.30E-06	2.49E-04	3.01E-02	8.20E-03	2.19E-02	2.95E-02	8.43E-03	3.75E-05	
Thorium (90)	Th-227	1.35E+01	5.12E-02	5.44E-05	3.37E-05	4.14E-02	5.64E-01	1.34E-01	3.72E-01	5.38E-01	1.34E-01	6.10E-04	
Thorium (90)	Th-228	3.63E-01	1.91E+00	4.29E-04	2.66E-04	1.61E-01	7.25E-03	2.13E-03	5.42E-03	7.12E-03	2.53E-03	9.63E-06	
Thorium (90)	Th-229	9.44E-05	7.34E+03	2.25E-03	1.85E-03	2.79E-01	2.88E-01	8.57E-02	2.19E-01	2.84E-01	9.06E-02	3.88E-04	
Thorium (90)	Th-230	9.19E-06	7.54E+04	9.36E-04	7.92E-04	3.85E-01	1.11E-03	3.94E-04	8.87E-04	1.09E-03	7.49E-04	1.77E-06	
Thorium (90)	Th-231	2.38E+02	2.91E-03	1.71E-06	1.24E-06	1.40E-06	3.25E-02	1.17E-02	2.67E-02	3.25E-02	1.78E-02	5.41E-05	
Thorium (90)	Th-232	4.93E-11	1.41E+10	1.03E-03	8.55E-04	9.47E-02	4.78E-04	2.05E-04	4.15E-04	4.76E-04	5.30E-04	9.22E-07	
Thorium (90)	Th-233	1.63E+04	4.24E-05	1.08E-07	8.07E-08	7.84E-08	1.83E-01	4.20E-02	1.12E-01	1.67E-01	8.17E-02	2.09E-04	
Thorium (90)	Th-234	1.05E+01	6.60E-02	1.73E-05	1.25E-05	3.18E-05	2.32E-02	8.39E-03	1.92E-02	2.32E-02	9.57E-03	3.76E-05	
Thorium (90)	Th-235	5.13E+04	1.35E-05	0.00E+00	0.00E+00	0.00E+00	3.18E-01	7.27E-02	1.89E-01	2.86E-01	1.52E-01	3.42E-04	
Thorium (90)	Th-236	9.71E+03	7.13E-05	4.33E-07	3.23E-07	2.48E-07	1.68E-01	3.94E-02	1.06E-01	1.56E-01	6.97E-02	1.96E-04	
Titanium (22)	Ti-44	1.16E-02	6.00E+01	2.74E-05	2.15E-05	4.92E-04	3.25E-01	1.29E-01	2.84E-01	3.25E-01	1.44E-01	5.70E-04	
Titanium (22)	Ti-45	1.97E+03	3.52E-04	7.44E-07	5.59E-07	4.11E-07	4.78E+00	9.90E-01	2.82E+00	4.33E+00	1.01E+00	4.55E-03	
Titanium (22)	Ti-51	6.32E+04	1.10E-05	0.00E+00	0.00E+00	0.00E+00	1.98E+00	4.35E-01	1.22E+00	1.83E+00	5.31E-01	2.00E-03	
Titanium (22)	Ti-52	2.14E+05	3.23E-06	0.00E+00	0.00E+00	0.00E+00	4.95E-01	1.47E-01	3.72E-01	4.89E-01	2.40E-01	6.71E-04	
Thallium (81)	Tl-190	1.40E+05	4.95E-06	0.00E+00	0.00E+00	0.00E+00	7.23E+00	1.52E+00	4.24E+00	6.52E+00	1.59E+00	6.94E-03	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Thallium (81)	Tl-190m	9.84E+04	7.04E-06	0.00E+00	0.00E+00	0.00E+00	1.37E+01	2.78E+00	7.92E+00	1.23E+01	2.81E+00	1.30E-02	
Thallium (81)	Tl-194	1.10E+04	6.28E-05	2.24E-07	1.69E-07	8.51E-08	4.95E+00	1.05E+00	2.93E+00	4.48E+00	1.08E+00	4.79E-03	
Thallium (81)	Tl-194m	1.11E+04	6.24E-05	1.83E-07	1.44E-07	1.31E-07	1.39E+01	2.84E+00	8.05E+00	1.24E+01	2.82E+00	1.32E-02	
Thallium (81)	Tl-195	5.23E+03	1.32E-04	1.15E-07	9.14E-08	1.10E-07	7.25E+00	1.32E+00	3.79E+00	6.07E+00	1.30E+00	6.70E-03	
Thallium (81)	Tl-196	3.30E+03	2.10E-04	2.38E-07	1.88E-07	1.74E-07	1.11E+01	2.05E+00	5.88E+00	9.40E+00	2.01E+00	1.03E-02	
Thallium (81)	Tl-197	2.14E+03	3.24E-04	1.10E-07	8.55E-08	1.67E-07	2.37E+00	4.93E-01	1.37E+00	2.09E+00	4.93E-01	2.36E-03	
Thallium (81)	Tl-198	1.15E+03	6.05E-04	3.34E-07	2.74E-07	3.38E-07	1.21E+01	2.19E+00	6.30E+00	1.01E+01	2.13E+00	1.11E-02	
Thallium (81)	Tl-198m	3.25E+03	2.13E-04	2.59E-07	2.05E-07	2.99E-07	6.46E+00	1.36E+00	3.85E+00	5.87E+00	1.34E+00	6.26E-03	
Thallium (81)	Tl-199	8.18E+02	8.47E-04	1.29E-07	1.00E-07	2.15E-07	1.10E+00	2.65E-01	7.10E-01	1.02E+00	2.68E-01	1.20E-03	
Thallium (81)	Tl-200	2.33E+02	2.98E-03	9.14E-07	7.47E-07	7.92E-07	7.42E+00	1.44E+00	4.11E+00	6.46E+00	1.43E+00	6.98E-03	
Thallium (81)	Tl-201	8.33E+01	8.32E-03	4.70E-07	3.66E-07	8.14E-07	2.45E-01	8.54E-02	2.00E-01	2.43E-01	9.27E-02	3.81E-04	
Thallium (81)	Tl-202	2.07E+01	3.35E-02	2.07E-06	1.69E-06	1.70E-06	2.32E+00	5.14E-01	1.43E+00	2.13E+00	5.11E-01	2.32E-03	
Thallium (81)	Tl-204	1.83E-01	3.78E+00	5.96E-06	4.40E-06	7.59E-05	4.18E-03	1.77E-03	3.57E-03	4.17E-03	1.27E-02	2.04E-05	
Thallium (81)	Tl-206	8.67E+04	7.99E-06	0.00E+00	0.00E+00	0.00E+00	1.28E-02	7.58E-03	1.06E-02	1.25E-02	7.15E-02	4.64E-05	
Thallium (81)	Tl-206m	9.74E+04	7.12E-06	0.00E+00	0.00E+00	0.00E+00	1.34E+01	2.71E+00	7.73E+00	1.20E+01	2.68E+00	1.27E-02	
Thallium (81)	Tl-207	7.64E+04	9.08E-06	0.00E+00	0.00E+00	0.00E+00	2.39E-02	8.70E-03	1.60E-02	2.19E-02	6.56E-02	5.38E-05	
Thallium (81)	Tl-208	1.19E+05	5.81E-06	0.00E+00	0.00E+00	0.00E+00	2.17E+01	3.55E+00	1.04E+01	1.72E+01	3.46E+00	1.96E-02	
Thallium (81)	Tl-209	1.69E+05	4.11E-06	0.00E+00	0.00E+00	0.00E+00	1.29E+01	2.35E+00	6.76E+00	1.08E+01	2.36E+00	1.19E-02	
Thallium (81)	Tl-210	2.80E+05	2.47E-06	0.00E+00	0.00E+00	0.00E+00	1.68E+01	3.06E+00	8.80E+00	1.41E+01	3.09E+00	1.54E-02	
Thulium (69)	Tm-161	1.21E+04	5.75E-05	1.87E-07	1.45E-07	1.13E-07	7.23E+00	1.37E+00	3.87E+00	6.11E+00	1.39E+00	6.88E-03	
Thulium (69)	Tm-162	1.68E+04	4.13E-05	1.91E-07	1.46E-07	8.88E-08	1.16E+01	2.09E+00	5.98E+00	9.64E+00	2.08E+00	1.07E-02	
Thulium (69)	Tm-163	3.35E+03	2.07E-04	2.58E-07	2.01E-07	1.68E-07	7.53E+00	1.42E+00	4.02E+00	6.37E+00	1.40E+00	7.04E-03	
Thulium (69)	Tm-164	1.82E+05	3.81E-06	0.00E+00	0.00E+00	0.00E+00	4.39E+00	8.70E-01	2.45E+00	3.83E+00	9.16E-01	4.17E-03	
Thulium (69)	Tm-165	2.02E+02	3.43E-03	1.72E-06	1.32E-06	1.01E-06	2.78E+00	6.03E-01	1.67E+00	2.52E+00	6.11E-01	2.80E-03	
Thulium (69)	Tm-166	7.88E+02	8.79E-04	1.34E-06	1.06E-06	8.07E-07	1.18E+01	2.13E+00	6.15E+00	9.90E+00	2.09E+00	1.09E-02	
Thulium (69)	Tm-167	2.73E+01	2.53E-02	2.93E-06	2.16E-06	5.44E-06	5.16E-01	1.42E-01	3.59E-01	4.97E-01	1.55E-01	6.41E-04	
Thulium (69)	Tm-168	2.72E+00	2.55E-01	4.96E-06	3.85E-06	2.07E-05	6.71E+00	1.37E+00	3.87E+00	5.98E+00	1.37E+00	6.43E-03	
Thulium (69)	Tm-170	1.97E+00	3.52E-01	6.70E-06	4.85E-06	3.74E-05	1.14E-02	5.04E-03	9.75E-03	1.13E-02	2.91E-02	3.79E-05	
Thulium (69)	Tm-171	3.61E-01	1.92E+00	5.48E-07	3.92E-07	5.14E-06	9.00E-04	4.67E-04	8.50E-04	9.00E-04	6.21E-04	1.98E-06	
Thulium (69)	Tm-172	9.55E+01	7.26E-03	8.58E-06	6.29E-06	5.25E-06	2.91E+00	5.23E-01	1.50E+00	2.43E+00	5.66E-01	2.67E-03	
Thulium (69)	Tm-173	7.37E+02	9.41E-04	1.51E-06	1.11E-06	8.33E-07	2.04E+00	4.39E-01	1.24E+00	1.89E+00	4.51E-01	2.01E-03	
Thulium (69)	Tm-174	6.75E+04	1.03E-05	0.00E+00	0.00E+00	0.00E+00	9.79E+00	1.98E+00	5.64E+00	8.72E+00	1.99E+00	9.40E-03	
Thulium (69)	Tm-175	2.40E+04	2.89E-05	1.27E-07	9.58E-08	8.36E-08	6.18E+00	1.22E+00	3.47E+00	5.44E+00	1.25E+00	5.79E-03	
Thulium (69)	Tm-176	1.97E+05	3.52E-06	0.00E+00	0.00E+00	0.00E+00	1.18E+01	2.15E+00	6.18E+00	9.90E+00	2.19E+00	1.10E-02	
Uranium (92)	U-227	3.31E+05	2.09E-06	0.00E+00	0.00E+00	0.00E+00	4.93E-01	1.24E-01	3.38E-01	4.76E-01	1.24E-01	5.66E-04	
Uranium (92)	U-228	4.00E+04	1.73E-05	0.00E+00	0.00E+00	0.00E+00	1.46E-02	4.09E-03	1.07E-02	1.43E-02	4.57E-03	1.86E-05	
Uranium (92)	U-230	1.22E+01	5.70E-02	2.67E-04	2.06E-04	6.51E-02	3.96E-03	1.17E-03	2.91E-03	3.87E-03	1.17E-03	5.32E-06	
Uranium (92)	U-231	6.02E+01	1.15E-02	1.71E-06	1.25E-06	2.15E-06	2.15E-01	6.91E-02	1.70E-01	2.13E-01	7.80E-02	3.11E-04	
Uranium (92)	U-232	1.01E-02	6.89E+01	1.49E-03	1.24E-03	1.44E-01	7.23E-04	2.76E-04	5.77E-04	7.14E-04	8.53E-04	1.26E-06	
Uranium (92)	U-233	4.35E-06	1.59E+05	2.23E-04	1.89E-04	3.81E-02	9.19E-04	2.71E-04	6.56E-04	8.89E-04	5.56E-04	1.24E-06	
Uranium (92)	U-234	2.82E-06	2.46E+05	2.15E-04	1.83E-04	3.74E-02	3.46E-04	1.57E-04	2.91E-04	3.44E-04	6.78E-04	7.17E-07	
Uranium (92)	U-235	9.84E-10	7.04E+08	2.03E-04	1.73E-04	3.38E-02	7.01E-01	1.76E-01	4.86E-01	6.82E-01	1.74E-01	8.02E-04	
Uranium (92)	U-235m	1.40E+04	4.95E-05	2.15E-11	1.59E-11	3.33E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Uranium (92)	U-236	2.96E-08	2.34E+07	2.02E-04	1.72E-04	3.46E-02	1.76E-04	9.53E-05	1.54E-04	1.75E-04	5.63E-04	4.41E-07	
Uranium (92)	U-237	3.75E+01	1.85E-02	3.92E-06	2.87E-06	7.77E-06	4.78E-01	1.36E-01	3.49E-01	4.69E-01	1.44E-01	6.17E-04	
Uranium (92)	U-238	1.55E-10	4.47E+09	1.94E-04	1.65E-04	3.21E-02	1.71E-04	7.96E-05	1.34E-04	1.62E-04	4.57E-04	3.74E-07	
Uranium (92)	U-239	1.55E+04	4.46E-05	1.38E-07	1.02E-07	1.03E-07	1.56E-01	5.10E-02	1.17E-01	1.49E-01	9.53E-02	2.45E-04	
Uranium (92)	U-240	4.31E+02	1.61E-03	5.55E-06	4.03E-06	2.45E-06	1.49E-02	4.67E-03	1.15E-02	1.48E-02	6.53E-03	2.42E-05	
Uranium (92)	U-242	2.17E+04	3.20E-05	2.62E-07	1.95E-07	1.24E-07	1.94E-01	4.69E-02	1.23E-01	1.79E-01	8.43E-02	2.29E-04	
Vanadium (23)	V-47	1.12E+04	6.20E-05	3.10E-07	2.33E-07	1.35E-07	5.49E+00	1.15E+00	3.25E+00	4.99E+00	1.23E+00	5.25E-03	
Vanadium (23)	V-48	1.58E+01	4.38E-02	9.40E-06	7.36E-06	1.14E-05	1.74E+01	3.23E+00	9.32E+00	1.49E+01	3.17E+00	1.59E-02	

Dose Conversion Factors October 2024													
Radionuclides		Isotope-specific Information and Dose Conversion Factors											
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)	
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)			
Vanadium (23)	V-49	7.67E-01	9.04E-01	9.36E-08	6.81E-08	2.95E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Vanadium (23)	V-50	4.62E-18	1.50E+17	1.39E-05	1.26E-05	2.48E-04	8.95E+00	1.55E+00	4.50E+00	7.36E+00	1.50E+00	8.02E-03	
Vanadium (23)	V-52	9.73E+04	7.12E-06	0.00E+00	0.00E+00	0.00E+00	9.12E+00	1.60E+00	4.61E+00	7.53E+00	1.67E+00	8.23E-03	
Vanadium (23)	V-53	2.26E+05	3.06E-06	0.00E+00	0.00E+00	0.00E+00	6.26E+00	1.18E+00	3.36E+00	5.36E+00	1.27E+00	5.76E-03	
Tungsten (74)	W-177	2.76E+03	2.51E-04	2.66E-07	2.09E-07	1.93E-07	4.65E+00	9.90E-01	2.75E+00	4.17E+00	9.94E-01	4.66E-03	
Tungsten (74)	W-178	1.17E+01	5.92E-02	1.21E-06	9.21E-07	3.44E-06	2.41E-02	1.18E-02	2.24E-02	2.41E-02	1.50E-02	5.06E-05	
Tungsten (74)	W-179	9.83E+03	7.05E-05	1.75E-08	1.33E-08	5.99E-09	7.94E-02	3.98E-02	7.42E-02	7.94E-02	5.31E-02	1.69E-04	
Tungsten (74)	W-179m	5.69E+04	1.22E-05	0.00E+00	0.00E+00	0.00E+00	1.57E-01	5.10E-02	1.20E-01	1.54E-01	5.70E-02	2.32E-04	
Tungsten (74)	W-181	2.09E+00	3.32E-01	4.18E-07	3.20E-07	1.20E-06	6.41E-02	3.16E-02	5.98E-02	6.41E-02	3.97E-02	1.34E-04	
Tungsten (74)	W-185	3.37E+00	2.06E-01	2.24E-06	1.64E-06	1.57E-05	3.70E-04	1.36E-04	2.99E-04	3.66E-04	1.95E-04	5.79E-06	
Tungsten (74)	W-185m	2.28E+05	3.04E-06	0.00E+00	0.00E+00	0.00E+00	7.79E-02	2.37E-02	5.88E-02	7.66E-02	2.51E-02	1.09E-04	
Tungsten (74)	W-187	2.56E+02	2.71E-03	2.95E-06	2.21E-06	1.79E-06	2.41E+00	5.01E-01	1.41E+00	2.17E+00	5.16E-01	2.34E-03	
Tungsten (74)	W-188	3.62E+00	1.91E-01	1.05E-05	7.73E-06	6.36E-05	8.89E-03	2.11E-03	5.83E-03	8.46E-03	2.12E-03	1.28E-05	
Tungsten (74)	W-190	1.21E+04	5.71E-05	4.11E-07	3.10E-07	3.16E-07	4.65E-01	1.46E-01	3.55E-01	4.60E-01	1.80E-01	6.71E-04	
Xenon (54)	Xe-120	9.11E+03	7.61E-05	0.00E+00	0.00E+00	0.00E+00	1.96E+00	4.15E-01	1.16E+00	1.77E+00	4.34E-01	1.93E-03	
Xenon (54)	Xe-121	9.08E+03	7.63E-05	0.00E+00	0.00E+00	0.00E+00	8.74E+00	1.61E+00	4.61E+00	7.38E+00	1.64E+00	8.12E-03	
Xenon (54)	Xe-122	3.02E+02	2.29E-03	0.00E+00	0.00E+00	0.00E+00	2.34E-01	5.70E-02	1.50E-01	2.19E-01	7.03E-02	2.56E-04	
Xenon (54)	Xe-123	2.92E+03	2.37E-04	0.00E+00	0.00E+00	0.00E+00	3.46E+00	6.95E-01	1.96E+00	3.04E+00	7.12E-01	3.33E-03	
Xenon (54)	Xe-125	3.59E+02	1.93E-03	0.00E+00	0.00E+00	0.00E+00	1.19E+00	2.75E-01	7.60E-01	1.11E+00	2.89E-01	1.26E-03	
Xenon (54)	Xe-127	6.95E+00	9.97E-02	0.00E+00	0.00E+00	0.00E+00	1.21E+00	2.90E-01	8.00E-01	1.16E+00	2.99E-01	1.32E-03	
Xenon (54)	Xe-127m	3.16E+05	2.19E-06	0.00E+00	0.00E+00	0.00E+00	6.18E-01	1.68E-01	4.46E-01	6.07E-01	1.77E-01	7.67E-04	
Xenon (54)	Xe-129m	2.85E+01	2.43E-02	0.00E+00	0.00E+00	0.00E+00	5.72E-02	2.37E-02	4.35E-02	5.57E-02	4.87E-02	1.07E-04	
Xenon (54)	Xe-131m	2.14E+01	3.24E-02	0.00E+00	0.00E+00	0.00E+00	1.96E-02	8.76E-03	1.55E-02	1.92E-02	1.91E-02	4.17E-05	
Xenon (54)	Xe-133	4.82E+01	1.44E-02	0.00E+00	0.00E+00	0.00E+00	8.89E-02	3.57E-02	7.62E-02	8.91E-02	4.75E-02	1.60E-04	
Xenon (54)	Xe-133m	1.16E+02	6.00E-03	0.00E+00	0.00E+00	0.00E+00	1.19E-01	3.14E-02	7.98E-02	1.14E-01	4.13E-02	1.51E-04	
Xenon (54)	Xe-135	6.64E+02	1.04E-03	0.00E+00	0.00E+00	0.00E+00	1.23E+00	2.78E-01	7.88E-01	1.16E+00	2.92E-01	1.28E-03	
Xenon (54)	Xe-135m	2.38E+04	2.91E-05	0.00E+00	0.00E+00	0.00E+00	2.32E+00	4.78E-01	1.36E+00	2.11E+00	4.85E-01	2.21E-03	
Xenon (54)	Xe-137	9.54E+04	7.26E-06	0.00E+00	0.00E+00	0.00E+00	1.20E+00	2.78E-01	7.06E-01	1.07E+00	4.07E-01	1.21E-03	
Xenon (54)	Xe-138	2.59E+04	2.68E-05	0.00E+00	0.00E+00	0.00E+00	6.99E+00	1.22E+00	3.53E+00	5.75E+00	1.25E+00	6.39E-03	
Yttrium (39)	Y-81	3.10E+05	2.23E-06	0.00E+00	0.00E+00	0.00E+00	6.35E+00	1.39E+00	3.83E+00	5.79E+00	1.51E+00	6.25E-03	
Yttrium (39)	Y-83	5.14E+04	1.35E-05	0.00E+00	0.00E+00	0.00E+00	7.60E+00	1.55E+00	4.35E+00	6.76E+00	1.65E+00	7.19E-03	
Yttrium (39)	Y-83m	1.28E+05	5.42E-06	0.00E+00	0.00E+00	0.00E+00	4.54E+00	9.69E-01	2.73E+00	4.15E+00	1.03E+00	4.40E-03	
Yttrium (39)	Y-84m	9.22E+03	7.52E-05	6.62E-07	5.07E-07	2.78E-07	2.34E+01	4.48E+00	1.28E+01	2.02E+01	4.51E+00	2.15E-02	
Yttrium (39)	Y-85	2.27E+03	3.06E-04	8.99E-07	6.77E-07	4.29E-07	5.96E+00	1.23E+00	3.49E+00	5.38E+00	1.27E+00	5.66E-03	
Yttrium (39)	Y-85m	1.25E+03	5.55E-04	1.83E-06	1.37E-06	7.55E-07	7.77E+00	1.48E+00	4.24E+00	6.71E+00	1.51E+00	7.22E-03	
Yttrium (39)	Y-86	4.12E+02	1.68E-03	4.51E-06	3.54E-06	2.11E-06	2.15E+01	3.94E+00	1.14E+01	1.83E+01	3.87E+00	1.96E-02	
Yttrium (39)	Y-86m	7.59E+03	9.13E-05	2.65E-07	2.08E-07	1.27E-07	1.06E+00	2.43E-01	6.87E-01	1.00E+00	2.37E-01	1.12E-03	
Yttrium (39)	Y-87	7.61E+01	9.11E-03	2.63E-06	2.02E-06	1.72E-06	2.39E+00	4.97E-01	1.41E+00	2.17E+00	4.91E-01	2.27E-03	
Yttrium (39)	Y-87m	4.54E+02	1.53E-03	1.07E-06	8.10E-07	6.14E-07	1.61E+00	3.46E-01	9.86E-01	1.49E+00	3.40E-01	1.58E-03	
Yttrium (39)	Y-88	2.37E+00	2.92E-01	5.96E-06	4.81E-06	2.55E-05	1.69E+01	2.91E+00	8.48E+00	1.39E+01	2.82E+00	1.52E-02	
Yttrium (39)	Y-89m	1.40E+06	4.97E-07	0.00E+00	0.00E+00	0.00E+00	5.31E+00	1.01E+00	2.90E+00	4.60E+00	9.92E-01	4.86E-03	
Yttrium (39)	Y-90	9.47E+01	7.32E-03	1.37E-05	9.92E-06	6.55E-06	4.02E-02	2.35E-02	3.25E-02	3.87E-02	1.29E-01	9.24E-05	
Yttrium (39)	Y-90m	1.90E+03	3.64E-04	8.70E-07	6.44E-07	4.44E-07	3.29E+00	7.14E-01	2.04E+00	3.04E+00	7.04E-01	3.27E-03	
Yttrium (39)	Y-91	4.32E+00	1.60E-01	1.21E-05	8.77E-06	3.67E-05	3.49E-02	1.31E-02	2.32E-02	3.16E-02	8.69E-02	7.02E-05	
Yttrium (39)	Y-91m	7.33E+03	9.46E-05	5.40E-08	4.29E-08	4.92E-08	2.93E+00	6.00E-01	1.71E+00	2.65E+00	5.94E-01	2.76E-03	
Yttrium (39)	Y-92	1.71E+03	4.04E-04	2.51E-06	1.83E-06	7.96E-07	1.60E+00	3.31E-01	8.80E-01	1.38E+00	4.48E-01	1.54E-03	
Yttrium (39)	Y-93	5.96E+02	1.16E-03	5.92E-06	4.29E-06	1.92E-06	6.41E-01	1.41E-01	3.55E-01	5.47E-01	2.54E-01	6.57E-04	
Yttrium (39)	Y-94	1.95E+04	3.56E-05	4.18E-07	3.13E-07	1.22E-07	4.78E+00	9.27E-01	2.58E+00	4.09E+00	1.04E+00	4.46E-03	
Yttrium (39)	Y-95	3.54E+04	1.96E-05	2.11E-07	1.58E-07	6.70E-08	7.36E+00	1.22E+00	3.49E+00	5.81E+00	1.27E+00	6.67E-03	
Ytterbium (70)	Yb-162	1.93E+04	3.59E-05	1.50E-07	1.15E-07	7.73E-08	1.03E+00	2.58E-01	6.80E-01	9.66E-01	2.69E-01	1.17E-03	
Ytterbium (70)	Yb-163	3.30E+04	2.10E-05	7.66E-08	5.92E-08	3.77E-08	4.05E+00	8.00E-01	2.24E+00	3.53E+00	8.23E-01	3.84E-03	

Dose Conversion Factors October 2024												
Radionuclides		Isotope-specific Information and Dose Conversion Factors										
Element (Atomic Number)	Isotope	Lambda (1/yr)	Half-life (yr)	Soil Ingestion DCF (mrem/pCi)	Adult Soil Ingestion DCF (mrem/pCi)	Inhalation DCF (mrem/pCi)	Soil Volume	Soil Volume	Soil Volume	Soil Volume	External Exposure DCF (Ground Plane) (mrem/yr per pCi/cm ²)	External Exposure DCF (Submersion) (mrem/yr per pCi/m ³)
							External Exposure DCF (Infinite Volume) (mrem/yr per pCi/g)	External Exposure DCF (1 cm) (mrem/yr per pCi/g)	External Exposure DCF (5 cm) (mrem/yr per pCi/g)	External Exposure DCF (15 cm) (mrem/yr per pCi/g)		
Ytterbium (70)	Yb-164	4.81E+03	1.44E-04	4.51E-07	3.39E-07	1.96E-07	1.18E-01	4.37E-02	8.97E-02	1.12E-01	5.58E-02	1.88E-04
Ytterbium (70)	Yb-165	3.68E+04	1.88E-05	0.00E+00	0.00E+00	0.00E+00	1.52E+00	3.42E-01	9.02E-01	1.35E+00	3.66E-01	1.60E-03
Ytterbium (70)	Yb-166	1.07E+02	6.47E-03	4.55E-06	3.54E-06	3.29E-06	1.29E-01	6.54E-02	1.20E-01	1.29E-01	8.76E-02	2.77E-04
Ytterbium (70)	Yb-167	2.08E+04	3.33E-05	3.33E-08	2.55E-08	2.99E-08	8.03E-01	2.50E-01	5.98E-01	7.77E-01	2.78E-01	1.12E-03
Ytterbium (70)	Yb-169	7.90E+00	8.77E-02	4.07E-06	3.03E-06	1.39E-05	1.03E+00	3.12E-01	7.58E-01	1.01E+00	3.45E-01	1.39E-03
Ytterbium (70)	Yb-175	6.04E+01	1.15E-02	2.23E-06	1.62E-06	3.00E-06	1.92E-01	4.33E-02	1.21E-01	1.79E-01	4.31E-02	2.02E-04
Ytterbium (70)	Yb-177	3.18E+03	2.18E-04	4.63E-07	3.32E-07	3.13E-07	1.08E+00	2.17E-01	6.05E-01	9.36E-01	2.61E-01	1.06E-03
Ytterbium (70)	Yb-178	4.92E+03	1.41E-04	5.85E-07	4.29E-07	3.19E-07	1.98E-01	4.32E-02	1.22E-01	1.84E-01	4.57E-02	2.06E-04
Ytterbium (70)	Yb-179	4.55E+04	1.52E-05	0.00E+00	0.00E+00	0.00E+00	5.40E+00	1.11E+00	3.16E+00	4.86E+00	1.18E+00	5.14E-03
Zinc (30)	Zn-60	1.53E+05	4.53E-06	0.00E+00	0.00E+00	0.00E+00	8.44E+00	1.76E+00	4.97E+00	7.64E+00	1.86E+00	8.07E-03
Zinc (30)	Zn-61	2.45E+05	2.83E-06	0.00E+00	0.00E+00	0.00E+00	8.99E+00	1.78E+00	5.02E+00	7.86E+00	1.88E+00	8.44E-03
Zinc (30)	Zn-62	6.61E+02	1.05E-03	4.51E-06	3.46E-06	2.43E-06	2.37E+00	4.93E-01	1.40E+00	2.15E+00	4.90E-01	2.27E-03
Zinc (30)	Zn-63	9.47E+03	7.32E-05	3.92E-07	2.96E-07	1.64E-07	6.13E+00	1.26E+00	3.57E+00	5.51E+00	1.36E+00	5.83E-03
Zinc (30)	Zn-65	1.04E+00	6.69E-01	1.76E-05	1.45E-05	9.47E-06	3.49E+00	6.41E-01	1.85E+00	2.97E+00	6.28E-01	3.18E-03
Zinc (30)	Zn-69	6.46E+03	1.07E-04	1.53E-07	1.14E-07	1.19E-07	2.95E-03	1.52E-03	2.41E-03	2.90E-03	2.44E-02	2.34E-05
Zinc (30)	Zn-69m	4.41E+02	1.57E-03	1.60E-06	1.23E-06	1.20E-06	2.24E+00	4.73E-01	1.34E+00	2.05E+00	4.65E-01	2.15E-03
Zinc (30)	Zn-71	1.49E+05	4.66E-06	0.00E+00	0.00E+00	0.00E+00	1.83E+00	3.83E-01	1.05E+00	1.63E+00	4.90E-01	1.77E-03
Zinc (30)	Zn-71m	1.53E+03	4.52E-04	1.15E-06	8.92E-07	7.25E-07	8.65E+00	1.77E+00	5.04E+00	7.79E+00	1.80E+00	8.22E-03
Zinc (30)	Zn-72	1.31E+02	5.31E-03	6.73E-06	5.25E-06	5.74E-06	5.98E-01	1.58E-01	4.28E-01	5.87E-01	1.55E-01	7.22E-04
Zirconium (40)	Zr-85	4.63E+04	1.50E-05	0.00E+00	0.00E+00	0.00E+00	8.28E+00	1.71E+00	4.80E+00	7.43E+00	1.80E+00	7.87E-03
Zirconium (40)	Zr-86	3.68E+02	1.88E-03	4.07E-06	3.17E-06	1.95E-06	1.35E+00	3.06E-01	8.67E-01	1.28E+00	3.07E-01	1.40E-03
Zirconium (40)	Zr-87	3.61E+03	1.92E-04	9.29E-07	6.73E-07	4.00E-07	5.17E+00	1.07E+00	3.03E+00	4.65E+00	1.15E+00	4.93E-03
Zirconium (40)	Zr-88	3.03E+00	2.28E-01	1.99E-06	1.63E-06	1.48E-05	2.02E+00	4.33E-01	1.23E+00	1.87E+00	4.28E-01	1.97E-03
Zirconium (40)	Zr-89	7.74E+01	8.95E-03	3.77E-06	2.93E-06	2.39E-06	6.69E+00	1.29E+00	3.70E+00	5.85E+00	1.29E+00	6.18E-03
Zirconium (40)	Zr-89m	8.75E+04	7.92E-06	0.00E+00	0.00E+00	0.00E+00	3.61E+00	7.14E-01	2.04E+00	3.19E+00	7.06E-01	3.36E-03
Zirconium (40)	Zr-93	4.53E-07	1.53E+06	3.70E-06	3.96E-06	8.14E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.53E-11
Zirconium (40)	Zr-95	3.95E+00	1.75E-01	4.66E-06	3.58E-06	2.40E-05	4.20E+00	8.26E-01	2.37E+00	3.72E+00	8.14E-01	3.89E-03
Zirconium (40)	Zr-97	3.63E+02	1.91E-03	1.04E-05	7.62E-06	4.33E-06	5.10E+00	1.00E+00	2.86E+00	4.48E+00	1.07E+00	4.75E-03