HPNS Default Building PRGs for Dusts

Resident BPRG (defaults and 10-4 risk)

Radionuclide
Equilibrium BPRG for Am-241
Am-241
Co-60
Equilibrium BPRG for Cs-137
Equilibrium BPRG for Eu-152
Eu-152
Eu-154
H-3
Equilibrium BPRG for Pu-239
Pu-239
Equilibrium BPRG for Ra-226
Ra-226
Equilibrium BPRG for Sr-90
Equilibrium BPRG for Th-232
Th-232
Equilibrium BPRG for U-235
Th-231
U-235

NOTES:

1. BPRG are conservative as model input are defaults. The dust ingestion rate is the main area where there is room for USDON and USEAP to negotiate (i.e. most impact fo

Worker BPRG (defaults and 10-4 risk)

Ingestion BPRG TR=0.0001 (pCi/cm^2)	External Exposure BPRG TR=0.0001 (pCi/cm^2)	Dust BPRG TR=0.0001 (pCi/cm^2{super 2})	Dust BPRG TR=0.0001 (mg/cm^2{super 2})	BPRG dpm/100 cm2	Radionuclide	Ingestion BPRG TR=0.0001 (pCi/cm^2)	External Exposure BPRG TR=0.0001 (pCi/cm^2)
1.96E-02	***7.95E+00***	***1.96E-02***	***1.60E+05***	4.35E+00	*Equilibrium BPRG for Am-241*	***1.64E-01***	***3.47E+01***
1.70E-01	2.15E+02	**1.69E-01**	**5.81E+08**	3.75E+01	Am-241	9.97E-01	9.38E+02
8.20E-01	1.84E+00	**5.67E-01**	**6.40E+11**	1.26E+02	Co-60	1.24E+01	8.02E+00
7.34E-01	***7.92E+00***	***6.72E-01***	***6.35E+10***	1.49E+02	*Equilibrium BPRG for Cs-137*	***2.85E+00***	***3.46E+01***
5.17E-01	***3.91E+00***	***4.57E-01***	***5.23E-04***	1.01E+02	*Equilibrium BPRG for Eu-152*	***3.71E+00***	***1.71E+01***
2.14E+00	3.91E+00	**1.38E+00**	**2.40E+11**	3.06E+02	Eu-152	3.16E+01	1.71E+01
1.23E+00	3.65E+00	**9.21E-01**	**2.49E+11**	2.04E+02	Eu-154	2.01E+01	1.60E+01
3.48E+02	-	**3.48E+02**	**3.36E+15**	7.73E+04	H-3	2.01E+03	-
1.84E-02	***6.98E+00***	***1.84E-02***	***4.54E+02***	4.08E+00	*Equilibrium BPRG for Pu-239*	***1.35E-01***	***3.05E+01***
1.37E-01	1.95E+04	**1.37E-01**	**8.50E+06**	3.04E+01	Pu-239	7.50E-01	8.53E+04
5.49E-03	***2.64E+00***	***5.48E-03***	***4.41E+07***	**1.22E+00**	*Equilibrium BPRG for Ra-226*	***3.89E-02***	***1.15E+01***
4.61E-02	6.42E+02	**4.61E-02**	**4.56E+07**	1.02E+01	Ra-226	3.08E-01	2.80E+03
2.31E-01	***2.35E+02***	***2.31E-01***	***4.99E+10***	5.13E+01	*Equilibrium BPRG for Sr-90*	***1.54E+00***	***1.03E+03***
1.08E-02	***2.01E+00***	***1.07E-02***	***1.86E+01***	2.38E+00	*Equilibrium BPRG for Th-232*	***9.88E-02***	***8.78E+00***
1.70E-01	1.23E+04	**1.70E-01**	**1.86E+01**	3.77E+01	Th-232	1.07E+00	5.38E+04
2.13E-02	***6.98E+00***	***2.12E-02***	***4.54E+02***	4.71E+00	*Equilibrium BPRG for U-235*	***1.65E-01***	***3.05E+01***
5.25E+00	3.24E+02	**5.16E+00**	**2.74E+15**	1.15E+03	Th-231	1.00E+02	1.42E+03
2.12E-01	2.89E+01	**2.10E-01**	**4.54E+02**	4.66E+01	U-235	1.84E+00	1.26E+02
			minimum	1.22E+00			

r effort).

Dust BPRG TR=0.0001 (pCi/cm^2{super 2})	Dust BPRG TR=0.0001 (mg/cm^2{super 2})	BPRG dpm/100 cm2
1.63E-01	-	3.62E+01
9.95E-01	2.93E-10	2.21E+02
4.87E+00	1.82E-13	1.08E+03
2.64E+00	-	5.86E+02
3.05E+00	-	6.77E+02
1.11E+01	5.19E-13	2.46E+03
8.90E+00	4.17E-13	1.98E+03
2.01E+03	5.15E-17	4.46E+05
1.35E-01	-	3.00E+01
7.50E-01	2.15E-08	1.67E+02
3.87E-02	-	**8.59E+00**
3.08E-01	3.29E-09	6.84E+01
1.54E+00	-	3.42E+02
9.77E-02	-	2.17E+01
1.07E+00	8.53E-03	2.38E+02
1.64E-01	-	3.64E+01
9.35E+01	2.02E-17	2.08E+04
1.82E+00	2.55E-04	4.04E+02
	minnimum	8.59E+00

2. The most restrictive BPRG is presented as consistent with USDON survey aproach.

3. The BPRG can also be post processed (modified outside the model) to better represent likely conditons (e.g. hot spots, area factors, etc.).

4. A Derived Concentration Guideline Level for gross aplha and gross beta for equilibrium BPRGS will be higher than the PRG.

As an example: The equilibrated Th-232 chain emits 6 alphas and 3 measurable betas per decay of Th-232. Thus the gross alpha DCGL would be the BPRG*6 and the Gross

See note 5. The equlibrated Ra-226 chain gross alpha and beta DCGL would depend on assumptions regarding post Rn-220 daughter farctions.

5. The Ra-226 chain BPRG is reduced by Po-210 and Pb-210, both of these occur in the chain post Rn-222, it is likely they do not remain in dusts in equilibrium, BPRG could

beta DCGL= BPRG*3.

be set to Ra-226?