SCHEDULE 5

MONITORING FOR INDIVIDUAL RADIONUCLIDES

2. Calculation of the ID

The ID must be calculated from the measured radionuclide concentrations and the dose coefficients **[**F1referred to as "standard values and relationships" in Article 13, and recommended for the estimation of doses from internal exposure in the definition of "standard values and relationships" in Article 4(96), of the Council Directive 2013/59/Euratom laying down basic safety standards for the protection against the dangers arising from exposure to ionising radiation**]** or more recent information recognised by the Department, on the basis of the annual intake of water (730l for adults). Where the following formula is satisfied, it can be assumed that the ID is less than the parametric value if 0.1mSv and no further investigation is required.

$$\sum_{i=1}^{n} \frac{C_i(obs)}{C_i(der)} \leq 1$$

where

$C_i(obs)$ = observed concentration of radionuclide *i*

$C_i(der)$ = derived concentration of radionuclide *i* (see Table 1)

n – number of radionuclides detected.

TABLE 1

Derived concentration for radioactivity in water intended for human consumption[1]

Origin	***Radionuclide***	***Derived concentration***[2]
Natural	U-238[3]	3.0 Bq/l
	U-234[3]	2.8 Bq/l
	Ra-226	0.5 Bq/l
	Ra-228	0.2 Bq/l
	Pb-210	0.2 Bq/l
	Po-210	0.1 Bq/l
Artificial	C-14	240 Bq/l
	Sr-90	4.9 Bq/l
	Pu-239/Pu-240	0.6 Bq/l

[1] This table includes value for the most common natural and artificial radionuclides; these are precise values, calculated for a dose of 0.1mSV, an annual intake of 730 litres and using the dose coefficients **[**F2referred to as "standard values and relationships" in Article 13, and recommended for the estimation of doses from internal exposure in the definition of "standard values and relationships" in Article 4(96), of the Council Directive 2013/59/Euratom laying down basic safety standards for the protection against the dangers arising from exposure to ionising radiation**]** ; derived concentration for other radionuclides can be calculated on the same basis, and values can be updated on the basis of more recent information recognised by the competent authorities.

[2] Where appropriate gross beta activity may be replaced by residual beta activity after subtraction of the K-40 concentration.

[3] This table allows only for the radiological properties of uranium, not for its chemical toxicity.

Am-241	0.7 Bq/l
Co-60	40 Bq/l
Cs-134	7.2 Bq/l
Cs-137	11 Bq/l
I-131	6.2 Bq/l

[1] This table includes value for the most common natural and artificial radionuclides; these are precise values, calculated for a dose of 0.1mSV, an annual intake of 730 litres and using the dose coefficients **[**F2referred to as "standard values and relationships" in Article 13, and recommended for the estimation of doses from internal exposure in the definition of "standard values and relationships" in Article 4(96), of the Council Directive 2013/59/Euratom laying down basic safety standards for the protection against the dangers arising from exposure to ionising radiation**]** ; derived concentration for other radionuclides can be calculated on the same basis, and values can be updated on the basis of more recent information recognised by the competent authorities.

[2] Where appropriate gross beta activity may be replaced by residual beta activity after subtraction of the K-40 concentration.

[3] This table allows only for the radiological properties of uranium, not for its chemical toxicity.

Textual Amendments

F1 Words in Sch. 5 para. 2 substituted (24.12.2018) by The Environment (Miscellaneous Amendments) Regulations (Northern Ireland) 2018 (S.R. 2018/200), reg. 1(1), **Sch. 2 para. 17(a)**

F2 Words in Sch. 5 Table 1 substituted (24.12.2018) by The Environment (Miscellaneous Amendments) Regulations (Northern Ireland) 2018 (S.R. 2018/200), reg. 1(1), **Sch. 2 para. 17(b)**

Changes to legislation:
There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations (Northern Ireland) 2017, Paragraph 2.