SCHEDULE 3

MONITORING

PART F

Indicative dose

Monitoring for compliance with the indicative dose

1.—(1) Each enforcing authority, in relation to water, may use reliable screening strategies to indicate the presence of radioactivity in the water.

(2) These strategies may include screening for—

(a) certain radionuclides or an individual radionuclide; or

(b) gross alpha activity or gross beta activity.

Screening for certain radionuclides or for an individual radionuclide

2.—(1) Where screening of the water is carried out for certain radionuclides or for an individual radionuclide, the enforcing authority must carry out an analysis of additional radionuclides if, in relation to any supply referred to in paragraph 1—

(a) one of the activity concentrations of a radionuclide in the second column of the table below exceeds 20% of the corresponding derived concentration in the third column; or

(b) the tritium concentration exceeds the parametric value for tritium.

(2) The enforcing authority must, in deciding which radionuclides require to be measured for each supply, take into account all relevant information about likely sources of radioactivity.

Origin	*Radionuclide* *(Note 1)*	*Derived concentration (Bq/l)*	*Notes*
Natural	U-238	3.0	Note 2
	U-234	2.8	Note 2
	Ra-226	0.5	
	Ra-228	0.2	
	Pb-210	0.2	
	Po-210	0.1	
Artificial	C-14	240	
	Sr-90	4.9	
	Pu-239 / Pu-240	0.6	
	Am-241	0.7	
	Co-60	40	
	Cs-134	7.2	
	Cs-137	11	

Origin	*Radionuclide* *(Note 1)*	*Derived concentration (Bq/l)*	*Notes*
	I-131	6.2	

Note 1: This table includes values for the most common natural and artificial radionuclides. These are precise values, calculated for a dose of 0.1 mSv, an annual intake of 730 litres and using the dose coefficients laid down in Table (A) of Annex III to Council Directive 96/29/Euratom laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation(**1**). Derived concentrations for other radionuclides may be calculated on the same basis.

Note 2: This allows only for the radiological properties of uranium, not for its chemical toxicity.

Screening for gross alpha activity and gross beta activity

3.—(1) The enforcing authority may use screening strategies for gross alpha activity and gross beta activity (or, where appropriate, residual beta activity after subtraction of the potassium-40 activity) to monitor the water for indicative dose.

(2) Subject to sub-paragraph (3), screening levels must be set at—

(a) 0.1 Bq/l for gross alpha activity; and

(b) 1.0 Bq/l for gross beta activity.

(3) The enforcing authority may set alternative levels to those specified in sub-paragraph (2) if it can demonstrate that these will ensure that an indicative dose of 0.1 mSv is not exceeded.

(4) If the gross alpha activity is less than 0.1 Bq/l and the gross beta activity is less than 1.0 Bq/l, the enforcing authority may assume that the indicative dose is less than 0.1 mSv.

(5) Where sub-paragraph (4) applies, the enforcing authority is not required to carry out a radiological investigation unless it is aware—

(a) that specific radionuclides are present in the water; and

(b) that these are liable to cause an indicate dose in excess of 0.1 mSv.

(6) If the gross alpha activity exceeds 0.1 Bq/l or the gross beta activity exceeds 1.0 Bq/l, the enforcing authority must carry out an analysis for specific radionuclides.

(7) The enforcing authority must, in deciding which radionuclides require to be measured for the purposes of sub-paragraph (6), take into account all relevant information about likely sources of radioactivity.

(8) If elevated levels of tritium are detected in a sample, the enforcing authority must also measure the gross alpha activity and gross beta activity in that sample.

Calculation of the indicative dose

4.—(1) The indicative dose must be calculated from—

(a) the measured radionuclide concentrations and the dose coefficients laid down in Table (A) of Annex III to Council Directive 96/29/Euratom laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation; or

(b) more recent information recognised by the Scottish Ministers,

on the basis of an annual intake of water of 730 litres for adults.

(**1**) OJ L 159, 29.6.1996, p. 1., as amended by Corrigendum (OJ L 314, 4.12.1996, p. 20).

(2) Where the following formula is satisfied, the enforcing authority may assume that the indicative dose is less than 0.1 mSv and that no further investigation is required:—

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

where—

"C_i *(obs)*" refers to the observed concentration of radionuclide "*i*";

"C_i *(der)*" refers to derived concentration of radionuclide "*i*"; and

"*n*" refers to the number of radionuclides detected.