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#### SCHEDULE 3

#### MONITORING

# PART E

#### Radioactive substances

#### General principles and monitoring frequencies

**1.**—(1) Subject to sub-paragraph (2), each enforcing authority in relation to a supply of water must ensure that the water is monitored for radon, tritium and indicative dose.

(2) Where the Scottish Ministers, by notice to the enforcing authority, confirm that they have established that radon, tritium or, as the case may be, indicative dose is not likely to be present in relation one or more supplies of water, for a period specified in the notice, in concentrations which could exceed the parametric value for the parameter, the enforcing authority is not required to monitor any such supply of water for the parameter during the period specified.

- (3) In case of naturally occurring radionuclides—
  - (a) where previous results show that the concentration of radionuclides in one or more supplies of water is stable, the minimum sampling and analysis frequencies are to be decided by the Scottish Ministers, and confirmed by notice to the enforcing authority, taking into consideration the risk to human health; and
  - (b) where the Scottish Ministers, by notice to the enforcing authority, confirm that they are satisfied (on the basis of representative surveys, monitoring data or other reliable information) that levels of radon, tritium and the calculated indicative dose in one or more supplies of water will, for a period specified in the notice, remain below the parametric value for each parameter at the point of compliance, the enforcing authority is not required to monitor any such supply for these parameters during the period specified.

(4) Where sub-paragraph (3)(b) applies, the Scottish Ministers must communicate the grounds for the decision to the European Commission and provide the Commission with the necessary documentation supporting that decision, including the findings of any surveys, monitoring or investigations carried out.

#### Radon

**2.**—(1) Subject to paragraphs 5 and 6, the enforcing authority must ensure that representative surveys are undertaken to determine the scale and nature of likely exposures to radon in the water originating from different types of ground water sources and wells in different geological areas.

(2) The surveys must be designed in such a way that underlying factors, and especially the geology and hydrology of the area, radioactivity of rock or soil, and well type, can be identified and used to direct further action to areas of likely high exposure.

(3) Monitoring of radon concentrations must be carried out if the enforcing authority has reason to believe, on the basis of the results of the representative surveys or other reliable information, that the parametric value for radon might be exceeded.

#### Tritium

**3.**—(1) Subject to paragraphs 5 and 6, the enforcing authority must monitor the water for tritium where—

- (a) an anthropogenic source of tritium or other artificial radionuclides is present within the catchment area for the supply; and
- (b) it cannot be shown on the basis of other surveillance programmes or investigations that the level of tritium is below the parametric value for tritium.

(2) Where monitoring for tritium is required by sub-paragraph (1), samples must be taken in accordance with paragraph 6.

(3) If the concentration of tritium in any such sample exceeds the parametric value for tritium, the enforcing authority must carry out an investigation of the presence of other artificial radionuclides.

### **Indicative dose**

**4.**—(1) The enforcing authority must monitor the water for indicative dose where—

- (a) a source of artificial radioactivity or elevated natural radioactivity is present; and
- (b) it cannot be shown on the basis of other representative monitoring programmes or other investigations that the indicative dose is below the parametric value for that parameter.

(2) Where sub-paragraph (1) requires monitoring (of radionuclide levels) only in relation to a source of artificial radioactivity, samples must be taken in accordance with paragraph 6.

(3) Where sub-paragraph (1) requires monitoring (of radionuclide levels) in relation to a source of elevated natural radioactivity, the enforcing authority must determine the frequency of the monitoring required of—

- (a) gross alpha activity;
- (b) gross beta activity; or
- (c) individual natural radionuclides,

depending on the screening strategy adopted pursuant to Part B of this schedule.

(4) Where sub-paragraph (3) applies, the frequency determined may vary from a single check measurement to the frequency which would otherwise apply by virtue of paragraph 6.

(5) Where a single check for natural radioactivity is specified under sub-paragraph (3), the enforcing authority must carry out a further check if any change occurs in relation to the supply which is likely to influence the concentrations of radionuclides in the supply.

#### Water treatment

5. Where the water is treated to reduce the level of radionuclides, the enforcing authority must monitor the water for indicative dose, radon and tritium in accordance with paragraph 6 to verify the continued efficacy of that treatment.

### Minimum sampling and analysis frequencies

6. The minimum sampling and analysis frequency for the monitoring of radon, tritium and indicative dose in water (where required by this schedule) from a private water supply system or from a tanker or used in a food production undertaking is set out in the following table.

Volume of water (in m <sup>3</sup> ) distributed or produced each day within a supply zone (Note 1)		Number of samples per year
		(Notes 2 and 3)
> 0	≤ 100	1
> 100	≤ 1,000	1

Volume of water (in m <sup>3</sup> ) distributed or produced each day within a supply zone (Note 1)		Number of samples per year (Notes 2 and 3)
> 1,000	≤ 10,000	1, plus 1 for each $3,300 \text{ m}^3/\text{day}$ and part thereof of the total volume
> 10,000	≤ 100,000	3, plus 1 for each 10,000 $m^3/day$ and part thereof of the total volume
> 100,000		10, plus 1 for each 25,000 m <sup>3</sup> /day and part thereof of the total volume

Note 1: The volumes are calculated as averages taken over a year. The number of inhabitants in a supply zone may be used instead of the volume of water to determine the minimum frequency, assuming water consumption of 200 litres/day per person.

Note 2: As far as possible, the number of samples must be distributed equally in time and location.

Note 3: In the event of intermittent short-term supply the monitoring frequency of water distributed by tankers must be decided by each enforcing authority in relation to the water.

## Averaging

7. Where the parametric value for radon, tritium or, as the case may be, indicative dose is exceeded in a sample of the water, the Drinking Water Quality Regulator for Scotland must specify, by notice to the enforcing authority, the extent of resampling necessary to ensure that the measured values are representative of an average activity concentration for a full year.