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## NI DWI Information Letter 02/16

To: Board Level Contact of Northern Ireland Water, Asset Management Directorate

### **GUIDANCE ON THE WATER SUPPLY (WATER QUALITY)(AMENDMENT) REGULATIONS (NORTHERN IRELAND) 2015 (SR No. 363) – “THE 2015 AMENDMENT REGULATIONS”**

Dear Martin

#### **1. Purpose**

The purpose of this letter is to provide NI Water with advice on the requirements of the 2015 Amendment Regulations which came into effect on 28 November 2015 and transpose the Euratom Directive.

#### **2. Background**

The Euratom Directive adds radon to the list of parameters to be monitored for in drinking water. Radon is an odourless, colourless, radioactive gas that occurs naturally. The risk of occurrence is dependent on the geology of the area. Radon is soluble in water. There is a negligible risk from radon in surface waters, but there is a potential risk from groundwaters.

The 2015 Amendment Regulations fulfilled the requirement to transpose Council Directive 2013/51/EURATOM (The Euratom Directive) into legislation by member states no later than 28 November 2015. The regulations were made on 29 October 2015 and came into operation on 28 November 2015. These regulations amend The Water Supply (Water Quality) Regulations (Northern Ireland) 2007. The “Total Indicative Dose” parameter has been renamed as “Indicative Dose”.

In addition, there are minor amendments to The Water Supply (Water Quality) Regulations (Northern Ireland) 2007 and The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009 regarding construction products.

#### **3. Details**

Regulation 2 introduced the Radon parameter with a maximum permitted value of 100Bq/l. This is the regulatory limit and any contraventions of the limit should be dealt with by an appropriate level of investigation and through established reporting procedures. There is also a “health related” value of 1000Bq/l. If this is contravened, NI Water **must** carry out immediate remedial action on radiological protection grounds without further consideration.

It is important to note that the main route of exposure to radon from water is via inhalation, although oral exposure should also be considered. The dose from ingestion is small compared to the inhalation dose (research has concluded that, on average, 90% of the dose attributable to radon in drinking-water comes from inhalation rather than ingestion). Prolonged exposure to radon in air has been linked to an increased risk of lung cancer.

To reflect the naming convention in the Directive, Regulation 2 renames the “Total Indicative Dose” parameter measured in mSv/year to “Indicative Dose” measured in mSv. However, “Indicative Dose” means the committed effective dose for one year of ingestion from all radionuclides present in the drinking water supply.

Regulations 2 & 3 amend The Water Supply (Water Quality) Regulations (Northern Ireland) 2007 and The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009, updating references to Directive 89/106/EEC which has been repealed and referring to Regulation (EU) No. 305/2011 harmonising the marketing of construction products.

## **4. Monitoring Requirements**

### **4.1 Check monitoring**

Check Monitoring is required if a water treatment works has specific treatment to reduce the level of radionuclides in its final water. This is a check on the efficacy of the treatment. Radon treatment is unlikely to be required on a public water supply, but if required there are two main methods of treatment:

- Aeration: As radon is a gas it can be reduced from water by cascading the water (which normally occurs in most water treatment processes) or bubbling air through the water; or
- Adsorption: Radon can be adsorbed onto GAC filters.

Where specific treatment is in place for the removal of radionuclides, then check monitoring should meet the frequencies detailed in Table 3 of the amendment regulations.

### **4.2 Operational Monitoring (Risk Assessment)**

In considering operational monitoring requirements, NI Water should undertake risk assessments of all its sources. The research carried out by Ricardo-AEA on behalf of DWI (E&W) covered all of the UK and may be used as part of NI Water’s risk assessment process. The report contains water risk maps and may be accessed via the following link:

<http://www.dwi.gov.uk/research/completed-research/reports/DWI70-2-301.pdf>

Following operational monitoring and taking account of the Ricardo-AEA research, NI Water should submit evidence detailing the outcomes of the risk assessments for each water treatment works. Where appropriate, NI Water should apply for a waiver under Regulation 6(7).

On the basis of the information currently available, it is unlikely that regulatory monitoring of surface waters will be required. However, groundwater supplies should be monitored from January 2016. The frequency of monitoring should be based on NI Water’s risk assessment for each groundwater site. The Inspectorate should be informed of the frequency of monitoring. Monitoring may be carried out at supply points. NI Water may apply for a waiver under regulation 6(7) for groundwater supplies where previous sampling has shown the radon concentration to be less than half the PCV of 100 Bq/l.

### 4.3 Audit Monitoring

If the Inspectorate is unable to grant a waiver for any reason, then NI Water is required to carry out an audit monitoring programme. If audit monitoring is required, then frequencies should comply with Table 2 or 3 in the amendment regulations depending on whether or not consumer taps or supply points are going to be used.

### 4.4 Sampling and Analysis

Where monitoring is required, the method of analysis must conform to Schedule 3 of the amendment regulations. NI Water should ensure that regardless of which analytical method is selected, all collection and measurement systems should be included within an ISO 17025 accredited system which preferably conforms to the Drinking Water Testing Specification.

### 4.5 Contraventions

If NI Water detects a radon level above 100Bq/l but less than 1000Bq/l at a consumer's tap, then air monitoring for radon should be carried out as part of NI Water's investigation, to establish the contribution of drinking water to the overall radon level.

## 5. **Other Matters**

Copies of this letter are being sent to the Director of Water Policy & Shareholder Division, DRD; the Director of Resource Efficiency Division (NIEA); the Director of Public Health; Consultants in Health Protection; the Chief Environmental Health Officer (DHSSPS); Chief Environmental Health Officers, district councils; Head of Water, CCNI; and the Director of Water Regulation, Utility Regulator.

## 6. **Enquiries**

Any enquiries about this letter should be addressed to David O'Neill (028 9056 9243) or myself.

Please acknowledge receipt of this letter, by e-mail to [DWI@doeni.gov.uk](mailto:DWI@doeni.gov.uk).

Yours sincerely



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