From: [redacted]
To:
Cc:
Subject: rnobyl in soils
Date: 19 June 2025 10:04:41
Attachments: [redacted]

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Dear [redacted] and [redacted]

Please find a general response below and then answers to your direct questions. Some of the queries about the impact on the Northern Irish may be areas where you already have access to relevant information or greater familiarity than we do.

Re the 2 reports [redacted], who runs UKHSA's Internal Dosimetry group which includes gamma spectrometry, looked over them. I will summarise what [redacted] said focussing on 2021 report. This

- Brings together data from 2005 with the many runs until 2020.
- The average data is 2.92kBq/m2 which is about 40Bq/kg with a high of about 9.8 kBq/m2 or ~210 Bq/kg (done by visual extrapolation).
- Overall patterns the same from the 2007 report i.e. still in the same areas and in linear patterns
- The have decay corrected and removed any spurious data (i.e fly-height above 100m)
- Maps look good but some more validation of cross comparison from kBq/m2 to Bq/kg might need to be done as there is large uncertainty due to spread in values.

Regarding specific questions

1. What would be the dose to a member of the general public from living and working on one of the higher activity level areas?
   Latest RIFE report (RIFE 29) states that "In the past, the highest concentrations of radiocaesium in milk were from those regions that received the greatest amounts of fallout from Chernobyl. However, the concentrations are now very low, and it is not possible to distinguish this trend." This suggests that the dose to a member of the public living or working in these areas is negligible and well below the public dose limit of 1 mSv/year. RIFE refers to cow milk but in Northern Ireland, Cumbria and North Wales it was sheep meat that was restricted but I assume you will be aware of the most recent information on these levels.
2. How do the levels here compare to elsewhere in the UK (if that information is available)?
   Information is available in Post Chernobyl surveys of radiocaesium in soil, vegetation, wildlife and fungi in Great Britain . The latest information is dated up to 1992. By decay correcting the values to 2022 the average is 7 kBq/m2 with the highest being 22 kBq/m2 ie higher than NI values
3. The query is about construction (e.g. of a wind farm) in the area. What would be the risk of carrying out construction in the highest level areas (i.e. digging out and handling significant quantities of soil/peat etc). This query extends to occupational exposure of those conducting the works and whilst this would be a matter for Health and Safety Executive NI it would be useful to know if there could be any risk to those on site from disturbing the soil/directly in contact with soil.
   [ARCHIVED CONTENT] HPA - NRPB - W36 Methodology for Estimating the Doses to Members of the Public from the Future Use of Land Previously Contaminated with Radioactivity gives doses to construction workers - Table 25 gives a value of 2.41 e-4 Sv/y per Bq/g. Assuming activity concentrations of 40 to 200 Bq/kg results in doses of around tens of microSieverts per year. This is much lower than the public dose limit of 1000 microSieverts per year or 1 mSv/y.
4. The query specifically references "mobilising" the contamination? Would you be able to comment on the risk of it becoming airborne or getting into water sources?
   Caesium binds strongly to clay and organic matter, so it tends to remain in the upper soil layers and can persist for decades. According to Dubchak (2016), about 70–90% of radiocaesium is retained in a fixed form in the upper 5–20 cm of soil, regardless of soil type or contamination source (Distribution of Caesium in Soil and its Uptake by Plants, Dubchak 2016). There may be mobilisation to air in cases such as a wildfire or extreme events and some mobilisation into water but given that caesium is likely to be in top layers of soil then it is unlikely that caesium is likely to become more available from the digging of foundations for wind turbines.
5. Would information in this report suggest any residual risk to the food chain? Again refer to in RIFE 2012 which says: "In the past, the concentrations of radiocaesium in milk were highest from those regions that received the greatest amounts of Chernobyl fallout. However, the concentrations are now very low and it is less easy to distinguish this trend. The highest concentrations of caesium-137 were found in Northern Ireland though at levels of negligible radiological significance". This suggests no significant residual risk to the food chain. Again you will be better placed to have information about agricultural practices and any monitoring of foodstuffs in Northern Ireland.
6. Is the information in the reports sufficient to draw public health conclusions? The report shows the Cs-137 levels. Due to radioactive decay (Cs-137 has a half-life of 30 years and it is now 40 years after the accident) the levels will have decayed to levels less than half of the original deposition. There is no evidence contradicting the RIFE 2012 conclusion that Cs-137 levels are of negligible radiological significance.

I hope this is helpful but please let us know if have follow-up queries.

Kind Regards

[redacted]

From: [redacted]

Sent: 19 June 2025 08:53
To: [redacted] ; [redacted]
Cc: [redacted] (PHA) ; [redacted]
Subject: RE: OFFICIAL: Advice re Cs137 from Chernobyl in soils

Hi [redacted],
We have agreed some text for you so [redacted] will send this on shortly.
Kind regards,
[redacted]

From: [redacted] [redacted]@daera-ni.gov.uk>
Sent: 19 June 2025 08:34
To: [redacted] [redacted]@ukhsa.gov.uk>; [redacted] <[redacted]@ukhsa.gov.uk>
Cc: [redacted] (PHA) <[redacted]@hscni.net>; [redacted] [redacted]@health-ni.gov.uk>
Subject: RE: OFFICIAL: Advice re Cs137 from Chernobyl in soils

EXTERNAL: This email originated outside of UKHSA. Do not click links or attachments unless you recognise the sender.

Hi [redacted] and [redacted],
I was wondering if you have had a chance to look at this yet? We are due to issue our response at the beginning of next week so I really need to send it for clearance by cop tomorrow. [redacted]ng [redacted].
Thanks,
[redacted]

From: [redacted] [redacted]@ukhsa.gov.uk>
Sent: 12 June 2025 14:10
To: [redacted] <[redacted]@health-ni.gov.uk>
Cc: [redacted] <[redacted]@daera-ni.gov.uk>; [redacted] (PHA) [redacted]@hscni.net>; [redacted] <[redacted]@ukhsa.gov.uk>
Subject: RE: OFFICIAL: Advice re Cs137 from Chernobyl in soils

Thanks [redacted], we'll take a look and see what we can provide to answer the questions raised.
I've copied in [redacted] as [redacted] will be picking up this with me.
Kind regards,
[redacted]

From: [redacted] <[redacted]@health-ni.gov.uk>
Sent: 11 June 2025 10:34
To: [redacted] [redacted]@ukhsa.gov.uk>
Cc: [redacted] <[redacted]@daera-ni.gov.uk>; [redacted] (PHA) [redacted]@hscni.net>
Subject: OFFICIAL: Advice re Cs137 from Chernobyl in soils

EXTERNAL: This email originated outside of UKHSA. Do not click links or attachments unless you recognise the sender.

Hello [redacted] – Thank you for coming back to us and confirming that you can provide some advice on the reports shared by [redacted].
[redacted], so I have collated questions below for you to consider. The questions relate specifically to the Sperrins area in Northern Ireland, which is an upland area on the borders of counties Tyrone and Londonderry and focus on potential construction (e.g. wind farm/mining) in that area. The queries we have received suggest that this construction "*would disturb peat to significant depths — through blasting, roadbuilding, turbine base excavation, and cable trenching — creating the conditions for remobilisation of radioactive particles into air, surface water, and groundwater*" and points to public health impacts of this.
We would be grateful if you could consider the following questions:

1. What would be the dose to a member of the general public from living and working on one of the higher activity level areas?
2. How do the levels here compare to elsewhere in the UK (if that information is available)?
3. The query is about construction (e.g. of a wind farm) in the area. What would be the risk of carrying out construction in the highest level areas (i.e. digging out and handling significant quantities of soil/peat etc). This query extends to occupational exposure of those conducting the works and whilst this would be a matter for Health and Safety Executive NI it would be useful to know if there could be any risk to those on site from disturbing the soil/directly in contact with soil.
4. The query specifically references "mobilising" the contamination? Would you be able to comment on the risk of it becoming airborne or getting into water sources?
5. Would information in this report suggest any residual risk to the food chain?
6. Is the information in the reports sufficient to draw public health conclusions?

We have a deadline of the end of next week to provide a response – is it possible for you to provide your response to us within this timeline?
We are happy to discuss further or meet with you if that is necessary.
Kind regards

[redacted]
Castle Buildings | [redacted] | Stormont | Belfast | BT4 3SQ
Email: [redacted]@health-ni.gov.uk | Telephone: [redacted]

From: [redacted] <[redacted]@ukhsa.gov.uk>
Sent: 10 June 2025 18:17

To: [redacted] <[redacted]@daera-ni.gov.uk>
Cc: [redacted] <[redacted]@health-ni.gov.uk>; [redacted] (PHA) [redacted]@hscni.net>
Subject: OFFICIAL: RE: Advice re Cs137 from Chernobyl in soils

Hi [redacted],

Of course, no problem for the email and yes it fits in to the work we cover in the Radiation Assessments Department. We would be happy to provide some advice and look through the reports for you and comment on the public health aspects.

Are there any specific questions that you have received that you wish to have support on? The values presented in the reports look to range up to around 10 kBq/m2 in both reports and seem to tie in with previously published material based on soil samples.

Thanks

[redacted]

From: [redacted] <[redacted]@daera-ni.gov.uk>
Sent: 09 June 2025 08:00
To: [redacted] <[redacted]@ukhsa.gov.uk>
Cc: [redacted]@health-ni.gov.uk>; [redacted] (PHA) [redacted]@hscni.net>
Subject: Advice re Cs137 from Chernobyl in soils

EXTERNAL: This email originated outside of UKHSA. Do not click links or attachments unless you recognise the sender.

Hi [redacted],

Apologies for the random email – I wasn't sure who would be best to address this too so please feel free to forward if it isn't you. I had sent it to [redacted] but I got an [redacted].

We in DAERA and also colleagues in Department of Health (NI) and Public Health Agency (cc'd) are trying to respond to some queries about the risk of Cs137 fallout from Chernobyl from peat/soil in the Sperrin mountains in NI. It appears to have been triggered by information contained in the attached reports produced by Geological Survey NI and Geological Survey Ireland. These reports are fairly technical and we were wondering if there was someone in UKHSA who would be able to interpret them and provide some advice in terms of risk to the public?

Happy to discuss.

Thanks,

[redacted]
Northern Ireland Environment Agency
Tel: [redacted]

***Sustainability** at the heart of a living, working, active landscape valued by everyone.*

NIEA Northern Ireland Environment Agency | Gníomhaireacht Comhshaoil Thuaisceart Éireann | Norlin Airlan Environment Agency
www.daera-ni.gov.uk
An Agency within the Department of Agriculture, Environment and Rural Affairs | Gníomhaireacht de chuid na Roinne Talmhaíochta, Comhshaoil agus Gnóthaí Tuaithe | An Agency wi'in the Depairtment o Fairmin, Environment an' Kintra Matthers
www.daera-ni.gov.uk

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[redacted]

Scottish Environment Protection Agency
Buidheann Dìon Àrainneachd na h-Alba

For the future of our environment

Radioactivity and Wind Farm Developments on peatlands

July 2025

OFFICIAL

Version	Revisions	Date
V 1.1	Publication version	July 2025

Radioactive Fallout in Scotland and Development of Windfarms

Overview

In recent months, SEPA has become aware of public concern in relation to disturbance of peatland areas by wind farm (or any other form of) construction and the potential for re-mobilisation of historic contamination from Chernobyl and other gaseous emissions. In response to this concern, SEPA has considered the published scientific data on, and reconsidered the potential impact from, key exposure pathways. Radiological dose assessments have been conducted considering potential exposure pathways and environmental concentrations of contamination of Cs-137 that would be necessary to breach the 1 millisievert limit as prescribed by the Environmental Authorisations (Scotland) Regulations 2018 (as amended) together with the dose constraints. In conclusion, SEPA does not regard that that potential resuspension of buried Cs-137 and other radionuclides arising from global deposition on peatlands in Scotland to pose a realistic risk to human health.

Background

The Chernobyl nuclear incident in April 1986 spread radioactive contamination across Europe, including the United Kingdom with upland areas being more susceptible to higher concentrations of radionuclides, including Caesium-137 (Cs-137) as the prime nuclide of concern.

Table 1: Selected radionuclides released by Chernobyl accident [1]

Radionuclide	Half-Life	Release (Exabecquerel)
Iodine-131 (I-131)	8.04 days	1.8
Caesium-134 (Cs-134)	2.06 years	8.5E-02
Caesium-137 (Cs-137)	30 years	4.7E-02
Strontium-90 (Sr-90)	29.12 years	1E-02
Plutonium-241 (Pu-241)	14.4 years	3E-03

Of the radionuclides released in the Chernobyl accident, in Scotland, Caesium-137 is the main contributor to radiation dose. Assessments conducted by the United Nations Scientific Committee on the Effects of Atomic Radiation showed that Cs-137 was responsible for approximately 75% of the effective dose during the first year following the accident in areas above 55 degrees North. Figure 1 shows the breakdown of radiation dose by pathway and by radionuclide.

[1] Briefing European Parliamentary Research Service

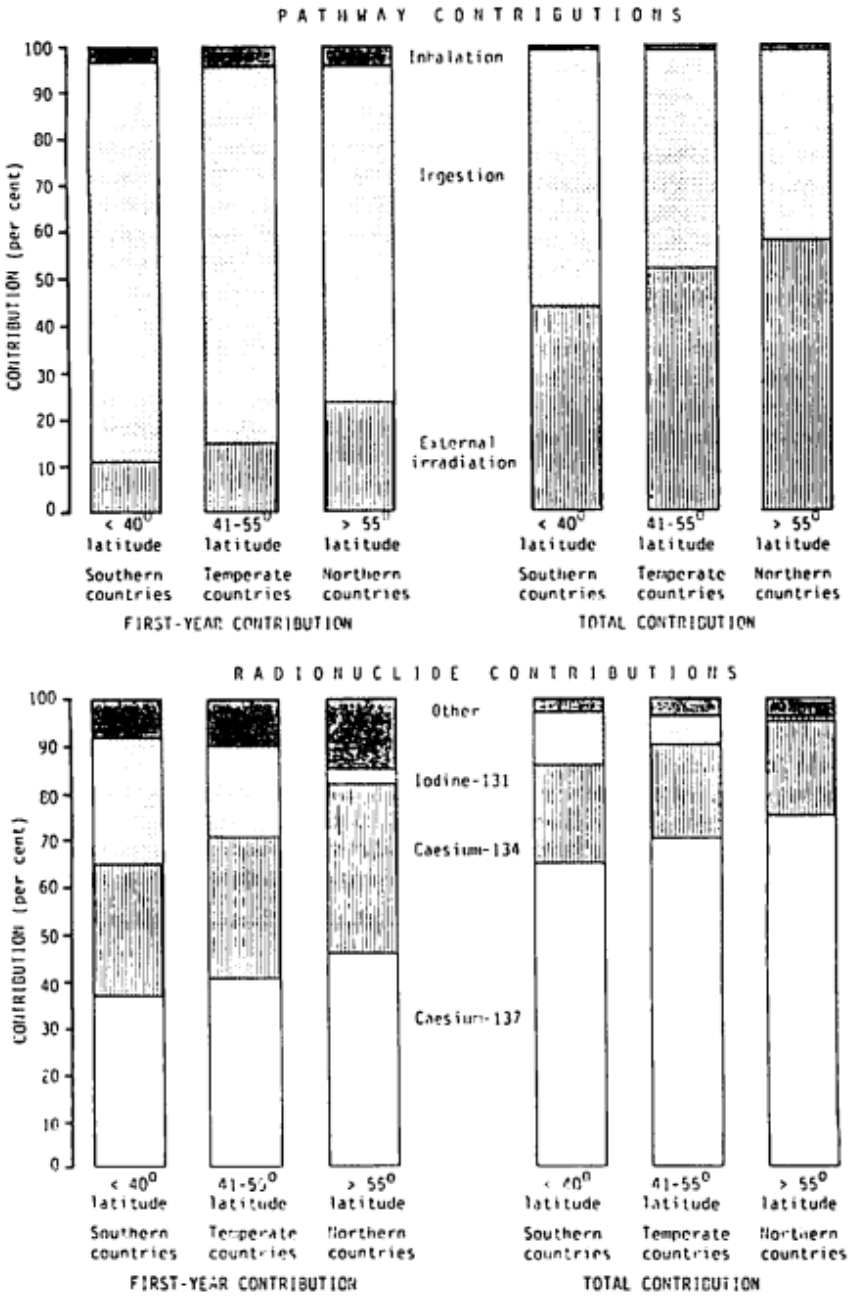


Figure 1: Pathway and Radionuclide Contribution to the first-year effective dose equivalent (1988 UNSCEAR Report [2])

As Scotland's environment regulator, SEPA are responsible for ensuring that no member of the public receives a radiation effective dose of 1 millisievert per year from all permitted sources under the Environmental Authorisations (Scotland)

[2] UNSCEAR 1988 Report - Annex D

Regulations 2018 [3] (as amended). Alongside this, as part of our duties, SEPA undertake a comprehensive environmental radioactivity monitoring programme throughout Scotland. The monitoring is primarily focussed on the impacts of large sources of radioactivity, such as nuclear licensed sites like Dounreay and Sellafield; however, SEPA also undertake background monitoring (water, milk, crops, diet etc) to provide additional data. All of the results are published each year in the Radioactivity in Food in the Environment [4] report.

Chernobyl and regional monitoring were contained as a separate chapter (normally Chapter 7 or 8) of the report for many years. SEPA are aware of the restrictions on livestock sales up until clearance in 2012 in the UK, although the last farms in Scotland were de-restricted in 2010.

Dose Assessment Parameters

Hazard is the harm that an object poses to an individual. Risk is the probability of that hazard causing harm. These are two different concepts that SEPA consider in our radiological assessments.

Using extreme values for dose assessments provides additional layers of protection and takes a very conservative approach. SEPA is directed to utilise the dose coefficients from the International Commission on Radiation Protection (ICRP), particularly those published in ICRP 119[5]. Rates of inhalation, ingestion and dose coefficients are provided in Tables 2, 3 and 4.

[3] Environmental Authorisations (Scotland) Regulations 2018 | Scottish Environment Protection Agency (SEPA)

[4] Radioactivity in Food and the Environment (RIFE) reports

[5] ICRP 119 - Compendium of Dose Coefficients based on ICRP Publication 60

Table 2: Inhalation and Ingestion Rates

Age Group	Inhalation rate (litres/year)	Ingestion Rate Basis of beef	Ingestion Rate of beef (kg/y)
1-year old	1.9E+06	20% adult rate	20
10-year old	5.6E+06	70% adult rate	70
Adult	8.1E+06	100% adult rate	100

Note: Inhalation values based on ICRP 119. Highest adult consumption of beef across EU countries in 1995 was France at 29 kg/y. Value of 100 kg/y is set as an extreme value. Ratios based on ICRP 119. (Source European Commission, SEC(97) 819 final, Situation and Outlook, Beef Sector - 3483.pdf (https://aei.pitt.edu/3483/1/3483.pdf) (ICRP 119, 2012)

Table 3: Inhalation Dose Coefficients

Age Group	Fast Inhalation Dose Co-efficient Cs-137 (Sv/Bq)	Medium Inhalation Dose Co-efficient Cs-137 (Sv/Bq)	Slow Inhalation Dose Co-efficient Cs-137 (Sv/Bq)
1 year old	5.4E-09	2.9E-08	1.0E-07
10 year old	3.7E-09	1.3E-08	4.8E-08
Adult	4.6E-09	9.7E-09	3.9E-08

Note: Fast, moderate and slow relate to the rates of absorption into blood. The f1 value for each is 1, 0.2 and 0.02, respectively, and is defined as the fraction of an ingested element absorbed directly into body fluids. (Source ICRP 119, 2012)

Table 4: Ingestion Dose Coefficients (Source ICRP 119, 2012).

Age Group	Ingestion Dose Coefficient Cs-137 (Sv/Bq)
1-year old	1.2E-08
10-year old	1.0E-08
Adult	1.3E-08

Dose Assessment Results

Table 5 details the calculated concentrations for the relevant pathways to deliver a dose of 1milliSievert (which is the equivalent of 1,000 microsieverts) per year.

Table 5: Calculated Cs-137 Concentration Required for 1,000 microSieverts (Public Dose Limit)

Age Group	Inhalation (Bq/m^3)	Ingestion (Bq/kg)	Pica (Bq/kg)
1-year old	97.5	4.20E+03	4.60E+04
10-year old	49.5	1.43E+03	5.50E+04
Adult	27.0	7.70E+02	4.25E+04

Note: Pica is the craving or consumption of objects that are not normally intended to be consumed. In this case we have assumed consumption of soil at 5,000 [6]mg/day.

[6] Exposure Factors Handbook Chapter 5 (Update): Soil and Dust Ingestion | Environmental Assessment | US EPA

These values are reviewed for each pathway below to demonstrate that such values have not been recorded in Scotland and as such people will not be exposed to greater than 1mSv.

Inhalation Pathway

The calculated concentrations for inhalation doses have not been measured in Scotland even during the Chernobyl incident. A potential inhalation pathway would be via resuspension of Cs-137 by excavation or wildfire. Wildfire would make the Cs-137 more available in the environment as it released from the soil, however as demonstrated by the dose assessment above, the concentrations necessary to result in a breach of the public dose limit are far in excess of those reported during the Chernobyl incident. Concentrations across Europe were much lower during the time of the incident and doses to those in the UK were estimated to be in the region of 40 microsieverts per year[7]. Examples of measured concentrations of Cs-137 in air following the Chernobyl and Fukushima incidents are given in Figure 2 and Table 6.

[7] UNSCEAR 1988 Report - Annex D

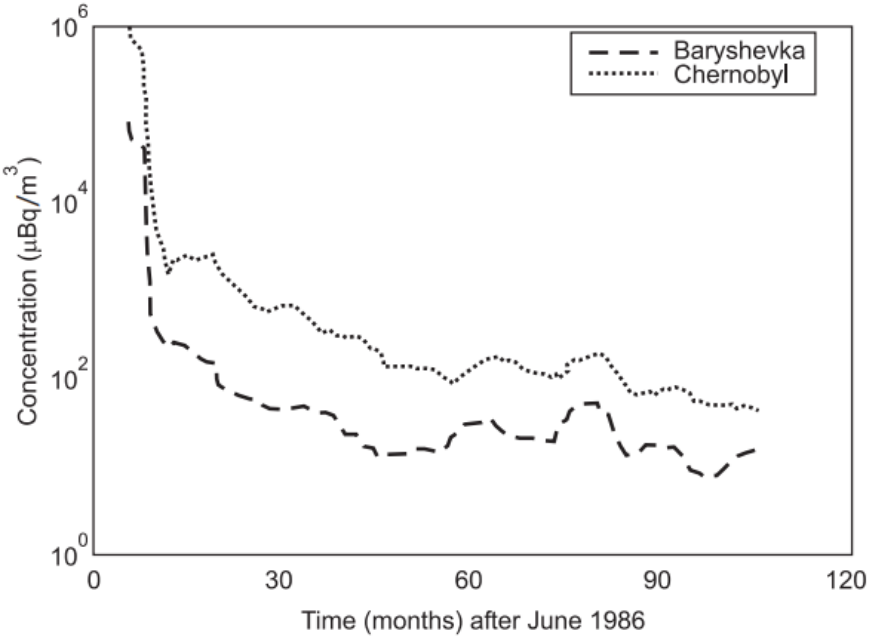


Figure 2: The concentrations of Cs-137 in air at Chernobyl and Baryshevka (~200 km distant) during 1986-1994[8].

Table 6: Measured concentrations of Cs-137 in air for comparison

Area	Cs-137 Measurements (Bq/m^3)
Chernobyl, contaminated area of red forest during wildfires (2020)	7E-04[9]
Chernobyl (from Figure 2) 1986 – 94	1E-03 – 1
Fukushima (2011 at time of incident)	16[10]

[8] Environmental consequences of the Chernobyl accident and their Remediation: Twenty years of experience

[9] Estimation of Cs-137 emissions during wildfires and dust storm in Chernobyl Exclusion Zone in April 2020 using ensemble iterative source inversion method - ScienceDirect (700 microBq/m^3 maximum detected daily average volume concentration measured in Kyiv, 11 April 2020)

[10] Fukushima Nuclear Accident Update Log | IAEA

Therefore, SEPA conclude that the inhalation pathway arising from windfarm construction is not of regulatory concern as it does not represent a realistic risk to the public.

Ingestion Pathway

For the ingestion (contaminated foodstuffs) pathway, SEPA have demonstrated the Cs-137 concentrations required in food to reach the public dose limit based on an extreme consumption of 100 kg/y for meat for adults (Table 5). For comparison, the highest beef consumption in Europe was found to be in the region of 29 kg/y in France so the basis of SEPA's assessment is highly conservative (over three times this rate). The highest concentration of Cs-137 in Europe was found to be in reindeer meat in Finland in the aftermath of Chernobyl, where values of up to 720 Bq/kg[11] were found. Also in Finland, wild mushrooms measured on average 6,600 Bq/kg in 1986 and can contain up to 940 Bq/kg post-Chernobyl[12], however the concentrations in the UK now will be much less due to radioactive decay since 1986 and the distance from Chernobyl. It is also notable that wild food consumption rates will not reach 100 kg per year, so doses would be scaled accordingly. Given that the activity since 1986 has decayed by half, there is no realistic possibility that these concentrations would be seen in Scotland.

Calculated concentrations to reach the public dose limit in Table 5 demonstrate that such doses are not possible at this time.

Pica Pathway

The final dose assessment undertaken is for a condition known as pica. Pica is an extremely rare medical condition where an individual seeks to consume non-nutritional objects, such as coal and soil. US EPA gives a guideline value for 5,000 mg/day for a single habitual pica consumer. The dose is modelled as a deliberate consumption of contaminated soil on an annual basis (kg/y). This is considered an extreme and unlikely pathway of exposure and would have non-radiological

[11] Cs-137 concentration in reindeer and its fodder plants

[12] Radioactivity in sold natural produce | Säteilyturvakeskus STUK

consequences for the individual prior to any radiological exposure taking effect in this case.

The results in Table 5 show that an individual would need to consume soil at a concentration that has not been measured in Scotland, consistently for one year to reach the public dose limit. Given that the concentration has not been identified in Scotland and the fact that the condition is extremely rare, SEPA considers that deliberate ingestion of contaminated soil does not pose a realistic risk to members of the public in Scotland.

Additional Monitoring

In addition, SEPA is also undertaking a small sampling programme of peat soils at four locations across Scotland near to proposed windfarms to check that the environmental concentrations of Cs-137 are not as high as these extreme theoretical concentrations given in Table 5. If these results do not give cause for concern, SEPA will take no further action. SEPA have no reason to believe that our current assessments require us to take any action. This monitoring data will be published on our website and in the Radioactivity in Food and the Environment (RIFE) Report alongside other data from 2025 in October 2026.

Conclusions

For the reasons of:

(i) known measured concentrations being lower than those used in the SEPA dose calculation, and;

(ii) extreme rates used in modelling to breach the statutory dose limit,

SEPA believes that there is no realistic risk posed to the public by any Cs-137 contamination from either dry dust/wildfire release, inhalation, ingestion or deliberate soil consumption exposure as a result of any release due to windfarm construction in Scotland.

If you would like this document in an accessible format, such as large print, audio recording or braille, please contact SEPA by emailing equalities@sepa.org.uk

NIEA Industrial Pollution & Radiochemical Inspectorate – Dalradian Gold Mine Statement of Case Rebuttal

Statement Number:	SoC Nos 5, 7, 16, 39, 41, 43, 44, 49, 57, 69, 73, 79 and 82
Date of Rebuttal:	15/11/24
Rebuttal Author:	Gillian Wasson
Issues Identified:	Radon Naturally Occurring Radioactive Material (NORM)

1. Statement 1: Radon

1.1 Several of the SoC (Nos 5, 7, 16, 39, 41, 43, 44, 49, 57, 69, 73 and 82) referenced the potential for radon gas released by the mining process to impact public health through either releases to air or to water.

1.2 Radon is a colourless, odourless radioactive gas that is formed by the radioactive decay of elements that naturally occur in rocks and soils. Exposure to radon gas can lead to the development of lung cancer.

1.3 Raised radon levels in air may often be found in mines and other underground workplaces and this would be regulated as an occupational health and safety issue by the Health and Safety Executive Northern Ireland under the Ionising Radiation Regulations (Northern Ireland) 2017.

1.4 NIEA has no role in regulating occupational radiological risks associated with radon.

1.5 Radon levels in drinking water from both public and private supplies are monitored under the Water Supply (Water Quality) Regulations (Northern Ireland) 2017. NIEA is responsible for monitoring private water supplies.

1.6 Monitoring results presented in the Dalradian SoC (in the Aurora Health Physics Services Ltd "Technical Report - NORM and Radon Gas for the Curraghinalt Project", May 2024) demonstrate that the mining process is very unlikely to result in any significant increase in radon in water discharged from the site.

2. Statement 2: Naturally Occurring Radioactive Material

2.1 Two of the SoC (49 and 79 – Save our Sperrins) referenced the potential for Naturally Occurring Radioactive Material (NORM) to be produced by the mining process and the potential for this material to impact on human health.

2.2 Mining activities have the potential to concentrate naturally occurring radioactive material from the bedrock and overlying soils in mine emissions. NORM generated from “mining and processing of ores other than uranium ore” is regulated under the

Radioactive Substances Act 1993 (RSA93) if it contains concentrations of naturally occurring radionuclides above specified levels. NORM waste can be either:

- Below “out of scope” values so it is not regulated under RSA93 due to the very low risk of this material;
- Above “out of scope" values but below “exemption” values so it does not require authorisation under RSA93 but the operator does have to comply with some conditions (set out in the Radioactive Substances Exemption (NI) Order 2011);
- Above “exemption” levels so that a Certificate of Authorisation under RSA93 is required for its accumulation and disposal.

2.3 During the application process for a Certificate of Authorisation, the applicant is expected to demonstrate that the best practicable means will be used to minimise the creation of radioactive waste and to minimise the activity in any waste to be disposed of. The use of appropriate disposal routes would also need to be demonstrated and discharge limits would be applied to any gaseous or liquid discharges.

2.4 Environmental Statement Vol 3 C7 “Radon and NORM Emissions Impact Assessment”, submitted to Dalradian Gold Ltd in support of their planning application in Nov 2017, contains an “assessment of radon gas and NORM emissions impacts at the Curraghinalt Project” carried out by RPS. This report was assessed by staff from NIEA’s Industrial Pollution & Radiochemical Inspectorate as part of the planning consultation process for LA10/2017/1248/F and comments on it were provided in our consultation response dated 24 April 2020.

2.5 Our comments on the planning consultation were: *Appendix C7 (Radon and NORM Emissions Impact Assessment) from the “2017 design” documents and the Addendum to the Assessment of Radon Gas and NORM Emission Impacts from the “2019 update” documents have been reviewed. IPRI is content with the methodology used and the impact assessment carried out. In order to ensure that no waste materials produced by the process contain NORM in quantities above the exempt criteria, IPRI is content with the proposed quarterly monitoring of waste water samples for NORM radionuclides in a laboratory capable of achieving detection limits well below the out of scope levels for the first 12 months of operation (refer to Informative 5). If any of these monitoring results show that waste materials produced by the process are above the exempt criteria specified in the Radioactive Substances Exemption (NI) Order 2011, the company should apply for a Certificate of Authorisation under the Radioactive Substances Act 1993, (refer to Informative 6).*

- *Informative no 5: Quarterly monitoring of waste water samples for NORM radionuclides should be carried out for the first 12 months of operation in a laboratory capable of achieving detection limits well below the out of scope levels specified in the the Radioactive Substances Act 1993 (Amendment) Regulations (Northern Ireland) 2011.*
- *Informative no 6: If any waste materials produced by the process contain naturally occurring radioactive materials (NORM) in quantities above the exempt criteria specified in the Radioactive Substances Exemption (NI) Order 2011, the operator will have to apply for a Certificate*

2.6 NIEA have recently reviewed that report and remain content with the contents and the monitoring carried out.

2.7 NIEA have also reviewed the updated report from Aurora submitted by Dalradian in their SoC (Aurora Health Physics Services Ltd "Tecnical Report - NORM and Radon Gas for the Curraghinalt Project", May 2024). We note that additional analysis of rock samples from deeper underground was carried out and as expected the NORM levels in these samples did not differ significantly from the previous samples taken from closer to the surface.

2.8 NIEA is content that the reports submitted have comprehensively assessed the risk of NORM from the process. The reports show that any NORM produced is likely to be below the “out of scope” values in the regulations and as such the process will not require regulation by NIEA.

Northern Ireland Environment Agency
Industrial Pollution and Radiochemical Inspectorate

Department of
Agriculture, Environment and Rural Affairs
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Fairmin, Environment an' Kintra Matthers
www.daera-nIgov.uk

Your reference: "Subject: Formal Response and Legal Reminder – Radiological Risk Oversight in Dalradian Gold and SPD/2025/0011/F Applications", 30 June 2025.

Our reference: DAERA/25-339

[redacted] via email request –
[redacted]

Industrial Pollution and Radiochemical Inspectorate.
Northern Ireland Environmental Agency.
17 Antrim Road
Lisburn
BT28 3AL

Email: ipri@daera-ni.gov.uk

29 July 2025

Dear [redacted],

Environmental Information Regulations 2004

With regard to your request for information received by the Department on 30 June 2025 which sought the following information from NIEA:

1. Confirm whether it has conducted or commissioned independent radiological sampling of soil and peat at either the Dalradian or SPD/2025/0011/F sites.
2. Disclose any internal correspondence, assessments, or reviews relating to radiological risks at those sites.
3. State whether it has raised the need for a regional upland radiological assessment with DAERA, HSENI, or the Department of Health.
4. Confirm whether the precautionary principle has been applied in relation to radiological uncertainties raised.

DRAFT

If you are deaf or have a hearing difficulty you can contact the Department via the Next Generation Text Relay Service by dialling 18001 + telephone number.

INVESTORS IN PEOPLE
We invest in people Standard

I can advise that the Department has completed its search and can confirm that it holds some of the information you requested which is below:

1. NIEA has not conducted or commissioned independent radiological sampling of soil and peat at ether the Dalradian or SPD/2025/0011/F sites.
2. Please see attached;
    - NIEA Consultation Response LA10/2017/1249/F.
    - IPRI Dalradian Statement of Case Rebuttal.
3. NIEA has not raised the need for a regional upland radiological assessment with DAERA, HSENI, or the Department of Health.
4. NIEA confirms that the precautionary principle has been applied. There is no evidence of a radiological risk in soil/peat in any area of Northern Ireland and therefore no requirement for radiological risk assessments to be undertaken.

A general environmental radioactivity monitoring programme is carried out in Northern Ireland and results of this are published in the Radioactivity in Food and the Environment report which is available online here: https://www.gov.uk/government/publications/radioactivity-in-food-and-the-environment-rife-reports. Using a risk based approach, radiological monitoring carried out by NIEA concentrates on discharges from currently operating nuclear installations and is therefore mainly focused on the marine environment.

Environmental monitoring for radioactivity in NI is also carried out by the Food Standards Agency and local councils.

If you require any clarification, believe that any part of your request has been overlooked, misunderstood or misinterpreted, please contact me in the first instance to see if it is a matter that can be resolved.

If you are unhappy with the manner in which your request for information has been handled or the decision to release/withhold information, you have the right to request a formal review by the Department.

If you wish to do so, please contact The Review Section either by e-mailing daera.informationmanager@daera-ni.gov.uk or by post at The Department of Agriculture, Environment and Rural Affairs, Data Protection & Information Management Branch, Floor 2, Jubilee House, 111 Ballykelly Road, Ballykelly, Limavady BT49 9HP, within two months from the date of this letter.

DRAFT

If after such an internal review you are still unhappy with the response, you have the right to appeal to the Information Commissioner at Wycliffe House, Water Lane, Wilmslow, CHESHIRE, SK9 5AF, who will undertake an independent review of the Department's decision.

Yours sincerely,

[redacted]

Chief Industrial Pollution and Radiochemical Inspector

DRAFT

[redacted]

From: [redacted]
Sent: 30 June 2025 08:26
To: IPRI
Cc: [redacted]
Subject: RE: Subject: Failure to Regulate Radiological Hazards – Dalradian and RES Wind Farm Planning Sites

Hi,
Could the response below please be issued [redacted]

Thanks,
[redacted]

Dear [redacted],
In respect of the proposed Dalradian Gold mine, NIEA have reviewed the radiological data provided by the applicant and are satisfied that the proposed operation does not require a Certificate under the Radioactive Substances Act. You will be aware that the application is subject to a Public Local Inquiry. The Public Local Inquiry will consider representations on a range of matters. These include sources of radioactivity, notably radon and NORM, which was identified by the inquiry as a topic to be considered under the suspended Inquiry timetable. When the Inquiry has considered representations, it will make recommendations to the referring authorities on the basis of those representations, including recommendations on what further information is required before a referring authority can form a view on its decision-making.

In respect of SPD/2025/0011/F RES Wind Farm, the activities covered by this application are outside the scope of the Radioactive Substances Act 1993. There is no evidence of any radiological risk associated with the construction or operation of this type of facility. There is also no evidence to suggest that construction or operation of this type of facility would be likely to impact on radiation levels in drinking water.

REPPIR 2019 and IRRNI 2017 are not regulated by NIEA – the Health and Safety Executive NI (HSENI) is the competent authority for these regulations.

Radon exposure for workers is controlled by HSENI under IRRNI 2017. The Public Health Agency has the responsibility for providing advice re radon exposure for members of the public.

Regards,
[redacted]

[redacted]
Chief Industrial Pollution and Radiochemical Inspector
Northern Ireland Environment Agency

From: [redacted]
Sent: 02 June 2025 01:20
To: [redacted]
Cc: [redacted]
Subject: Subject: Failure to Regulate Radiological Hazards – Dalradian and RES Wind Farm Planning Sites

CAUTION – This email has been received from outside the NICS network. If you have any concerns, please report for investigation.

Dear NIEA Director,

I write concerning the failure to address serious radiological environmental risks associated with:

K/2013/0072/F (Dalradian Gold)

SPD/2025/0011/F (RES Wind Farm)

Both sites lie within zones confirmed to retain Cs-137 contamination (Tellus mapping) and high radon risk (UKHSA). These are known hazards under:

The Radioactive Substances Act 1993 (as amended by the 2011 NI Regulations)

Environmental Liability Regulations (NI) 2009

REPPIR 2019 and IRRNI 2017

Inexplicably, there is no evidence of NIEA:

Requesting radiological surveys.

Requiring an environmental permit.

Advising on radon exposure for workers or residents.

In addition, DAERA's Regulation 19(7) Notice (2023) exempted NI Water from radon and tritium monitoring at multiple sites near both development zones. That exemption is legally contingent on environmental conditions not changing — a condition likely to be breached if these projects proceed.

I ask NIEA to:

1. Immediately review both applications under the precautionary principle.

2. Reassess whether a radioactive substances permit is required.

3. Advise both DfI and PAC that omission of radiological data renders current EIA documentation deficient.

Please confirm what steps NIEA is taking to prevent radiological pollution and protect public health in this context.

Can you please confirm receipt of email by return. Thank you.

Signed

[redacted]

Sent from Outlook for Android