



Department for
Business, Energy
& Industrial Strategy

Energy Bill Policy Statement

Excluded disposal sites

December 2022



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Summary

The Energy Security Bill was introduced into Parliament on 6 July 2022. This Bill will deliver a cleaner, more affordable and more secure energy system for the long term. It builds on the ambitious commitments in the British Energy Security Strategy to invest in homegrown energy and maintain the diversity and resilience of the UK's energy supply.

The Energy Bill¹ makes provisions to allow qualifying disposal facilities for radioactive waste of nuclear origin to exit the requirement for nuclear third party liability, in line with internationally agreed standards (referred to as the “Low Level Waste Exclusion” in this document²). It is important to note that, when the nuclear liability regime ceases to apply, third party liability (under ordinary law) would then apply to the site, providing an alternative but still robust legal regime for third party damage or injury.

There are currently only six disposal facilities for low level radioactive waste of nuclear origin in the UK and only four of them, all located in England, would be eligible to apply for the Low Level Waste Exclusion. We anticipate that a small number (1-3) of such facilities might be constructed in the next 10 years or so.

This measure will reduce costs for operators of qualifying disposal facilities for radioactive waste of nuclear origin. This will ensure that the disposal market remains attractive and the UK will have sufficient disposal facilities as the nuclear decommissioning programme accelerates through the 2020s-2080s.

The measure extends to Northern Ireland because the principal nuclear legislation (NIA 1965) applies across the UK. However, there are no disposal facilities for radioactive waste of nuclear origin in Northern Ireland and it is very unlikely that any will be constructed, particularly as NI has no nuclear licensed sites.

¹ The relevant clause in the Energy Bill is “Excluded Disposal Sites”.

² The OECD Nuclear Energy Agency Steering Committee's 2016 “Decision and Recommendation Concerning the Application of the Paris Convention on Third Party Liability in the Field of Nuclear Energy to Nuclear Installations for the Disposal of Certain Types of Low-level Radioactive Waste” referred to as the “Low Level Waste Exclusion” https://www.oecd-nea.org/jcms/pl_19768/decision-and-recommendation-concerning-the-application-of-the-paris-convention-on-third-party-liability-in-the-field-of-nuclear-energy-to-nuclear-installations-for-the-disposal-of-certain-types-of-low-level-radioactive-waste?details=true.

Excluded disposal sites – exclusion conditions and documents to support application for exclusion

The Energy Bill gives the Secretary of State the powers to write regulations as follows:

- specifying conditions that must be met to allow a disposal facility to be excluded from the nuclear third party liability regime, and
- specifying which documents must be supplied with an application for exclusion.

This policy statement covers both sets of regulations.

The Department has discussed this matter with the Devolved Administrations, operators of disposal facilities, the Nuclear Decommissioning Authority, the Environment Agency, the Scottish Environment Protection Agency (SEPA), Natural Resources Wales (NRW), the Department for Agriculture, Environment and Rural Affairs for Northern Ireland (DAERA-NI) and the Health and Safety Executive (HSE) and Health and Safety Executive Northern Ireland (HSE-NI).

BEIS proposes to consult on the draft regulations to adopt these internationally agreed standards in the autumn/winter of 2022. In the meantime, this statement outlines the proposed content of these draft regulations.

Regulations specifying conditions for exclusion

As set out in the Low Level Waste Exclusion, the conditions for exclusion will be that:

- (a) the disposal facility has not, in the past, accepted waste that breaches the radioactivity concentration limits in the OECD Low Level Waste Exclusion; and
- (b) the environmental permit for the disposal demonstrates that it will not, in the future, accept waste that breaches the radioactivity concentration limits in the OECD Low Level waste Exclusion; and
- (c) the estimated radiation dose³ to a member of the public in all reasonably foreseeable circumstances, including accidents, does not exceed the limit in the OECD Low Level Waste Exclusion; and
- (d) the nuclear criticality⁴ risk is negligible.

Note that a) and b) are included in the Energy Bill itself, referred to as the “site history condition” and the “site permit condition” respectively (Clause 232, 3(1)(a)(i) and (ii)). The new regulations specifying conditions for exclusion will therefore be limited to items c) “the dose criterion” and d) “the criticality criterion”.

³ Radiation dose is a measure of how much energy is absorbed into the body when someone is exposed to radiation.

⁴ Nuclear criticality is the state in which a nuclear reaction is self-sustaining.

Regulations specifying the documents required to support an application for exclusion

These regulations will stipulate the documents required for the site history condition, the permit condition, the dose condition and the criticality condition. The documents required will be:

For new disposal sites:

- The current environmental permit, which demonstrates that the operator must not receive waste which exceeds specific radioactivity concentration levels in Bq/g (Becquerels⁵ per gramme) set out in the OECD NEA Low Level Waste Exclusion, including the equation; [demonstrates compliance with the site permit condition] **and**
- A report, demonstrating that the annual radiation dose⁶ to a member of the public arising from the facility or its disposal inventory under all reasonably foreseeable circumstances including accidents will not exceed 1 mSv (milli-Sievert⁷). This report should be written on the basis that the disposal is full to the maximum extent allowed by the environmental permit. This report should be a copy of the report that must be submitted to HSE under the Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPPIR 2019, Regulation 3(2)); [demonstrates compliance with the dose condition] **and**
- An assessment demonstrating that the nuclear criticality⁸ risk is negligible. This should be either included in the report mentioned above or come from the Environmental Safety Case prepared for the relevant environment agency under the Environmental Permitting Regulations (England and Wales) 2016, or the Environmental Authorisations (Scotland) Regulations 2018 or the Radioactive Substances Act 1993 (in Northern Ireland)⁹; [demonstrates compliance with the criticality condition] **and**

⁵ The Becquerel is a unit which describes radioactivity. One Becquerel is defined as the activity of a quantity of radioactive material in which one nucleus decays per second.

⁶ Radiation dose is a measure of how much energy is absorbed into the body when someone is exposed to radiation.

⁷ A milli-Sievert (mSv) is a measure of radiation dose which accounts for the fact that ionising radiation can affect different parts of the body to differing degrees. The International Commission on Radiological Protection recommends that the annual dose to a member of the public should not exceed 1 mSv. (2007 Recommendations of the International Commission on Radiological Protection. ICRP Publication 103). This is also the limit in the Euratom Basic Safety Standards Directive, which the UK has transposed. For comparison, the average annual radiation dose to a member of the public in the UK is around 2.3 mSv, most of which comes from natural background radiation. <https://www.gov.uk/government/publications/ionising-radiation-dose-comparisons/ionising-radiation-dose-comparisons>.

⁸ Nuclear criticality is the state in which a nuclear reaction is self-sustaining.

⁹ See paragraph 5 – there are no such disposal facilities in NI and it is unlikely that any will be constructed.

- Evidence that the report mentioned above has been submitted to HSE¹⁰ for example, a copy of the email sent to HSE¹¹ enclosing the report.

For existing disposal facilities, the procedure is different. Existing disposal facilities will be obliged to obtain new environmental permits with limits on radioactivity concentrations equal to or lower than those in the OECD Low Level Waste Exclusion. However, under their previous environmental permits, it would, technically, have been possible to exceed the radioactivity concentration limits in the Low Level Waste Exclusion for two of the nine radionuclides listed (namely Pu239 and Am241). In practice, the Department has evidence from the Nuclear Decommissioning Authority that it is highly unlikely that these levels have been exceeded. The section below sets out the documents that must be provided with an application for existing sites.

For existing sites¹²:

- The current environmental permit, which demonstrates that the operator must not receive waste which exceeds the radioactivity concentration levels in in Bq/g (Becquerels¹³ per gramme) set out in the OECD Low Level Waste Exclusion, including the equation; [demonstrates compliance with the site permit condition] **and**
- All previous environmental permits demonstrating that the allowable radioactivity concentrations of the first 7 of the 9 radionuclides set out in the OECD Low Level Waste Exclusion have not been exceeded; [this is part of the demonstration of the site history condition] **and**
- Evidence from the relevant environment agency that there have been no relevant breaches of these previous environmental permits, or that, if there have, the unsuitable waste has been removed; [this is part of the demonstration of the site history condition] **and**
- A signed statement by the operator confirming that, to the best of their knowledge, the site has never accepted waste with radioactivity concentrations of Plutonium 239 (Pu239) or Americium 241 (Am241) exceeding 100 Bq/g (Becquerels per gramme), which is the limit specified for these two radionuclides in the OECD Low Level Waste Exclusion. The Nuclear Decommissioning Authority has carried out a study, which indicates that it is highly unlikely that any such waste has ever been sent to these permitted disposal sites, and therefore, the UK Government considers that a simple signed statement is sufficient to demonstrate historic compliance with this criterion; [this is part of the demonstration of the site history condition] **and**

¹⁰ Or HSE-NI in Northern Ireland

¹¹ Or HSE-NI, see above.

¹² There are four existing sites that might apply for the LLW Exclusion.

¹³ The Becquerel is a unit which describes radioactivity. One Becquerel is defined as the activity of a quantity of radioactive material in which one nucleus decays per second.

- A report, demonstrating that the annual radiation dose¹⁴ to a member of the public arising from the facility or its disposal inventory under all reasonably foreseeable circumstances including accidents will not exceed 1 mSv (milli-Sievert¹⁵). This report should be written on the basis that the disposal is full to the maximum extent allowed by the environmental permit. We suggest that the report is the same one that must be submitted to HSE under the Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR 2019, regulation 3(2)). This report should be written on the basis that the disposal is full to the maximum extent allowed by the environmental permit; [demonstrates compliance with the dose condition] **and**
- An assessment demonstrating that the nuclear criticality¹⁶ risk is negligible. This should be either included in the report mentioned above or come from the Environmental Safety Case prepared for the relevant environment agency under the Environmental Permitting Regulations (England and Wales) 2016, or the Environmental Authorisations (Scotland) Regulations 2018 or the Radioactive Substances Act 1993 (in Northern Ireland)¹⁷; [demonstrates compliance with the criticality condition] **and**
- Evidence that the report has been submitted to HSE¹⁸ for example, a copy of the email sent to HSE¹⁹ enclosing the report.

¹⁴ Radiation dose is a measure of how much energy is absorbed into the body when someone is exposed to radiation.

¹⁵ A millisievert is a measure of radiation dose which accounts for the fact that ionising radiation can affect different parts of the body to differing degrees.

¹⁶ Nuclear criticality is the state in which a nuclear reaction is self-sustaining.

¹⁷ See paragraph 5 – there are no such disposal facilities in NI and it is unlikely that any will be constructed.

¹⁸ Or HSE-NI in Northern Ireland

¹⁹ Or HSE-NI, see above.

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