



Office for
Nuclear Regulation

Interpretation of 'bulk quantities' in relation to the storage and disposal of radioactive matter

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Purpose

This statement describes the Office for Nuclear Regulation’s (ONR) approach to the interpretation of ‘bulk quantities’ in relation to the storage and disposal of radioactive matter for the purposes of section 1 of the Nuclear Installations Act 1965 (NIA 1965) and the Nuclear Installations Regulations 1971 (NIR 1971).

This statement provides clarity for ONR inspectors and prospective operators of installations designed or adapted for the storage or disposal of radioactive matter who may be considering whether they require a licence under section 1 of the NIA 1965 to operate that installation.

Scope

A site may only be used to install or operate an installation designed or adapted for the storage of ‘bulk quantities’ of radioactive matter (that is matter which has been produced or irradiated in the course of production or use of nuclear fuel) if a licence has been granted for that site under section 1 of the NIA 1965 and remains in force.

In addition, ONR anticipates that the UK government will take a similar approach to prescribing disposal, meaning a site may only be used to install or operate an installation designed or adapted for the disposal of ‘bulk quantities’ of radioactive matter (that is matter which has been produced or irradiated in the course of production or use of nuclear fuel) if a licence has been granted for that site under section 1 of the NIA 1965 and remains in force.

This statement sets out how ONR will determine whether an installation is designed or adapted for storage or disposal of ‘bulk quantities’ of such matter for the purposes of licensing under the NIA 1965.

Objective

In interpreting the phrase ‘bulk quantities’, ONR aims to:

- ensure a targeted, proportionate, consistent, and transparent approach to regulating the management of radioactive matter
- focus on applying the licensing regime to those hazards that require it, without imposing inappropriate or disproportionate obligations on industry when there is already adequate regulatory scrutiny in place
- secure public confidence
- continue to protect people and society from the hazards of the nuclear industry

Interpretation of ‘bulk quantities’

ONR will use the radionuclide specific values set out in the Radiation Emergency (Public Preparedness and Information) Regulations 2019 (REPPIR) as the basis for our interpretation of bulk quantities in the context of storage and disposal of radioactive matter, as follows:

In the context of **storage**: quantities of radioactive matter at or above 100 times the levels set out in REPPIR Schedule 1

A site licence will be required for the installation and operation of a storage facility if it is designed or adapted to store quantities of radioactive matter at or above 100 times the REPPIR level.

In the context of **disposal**: quantities of radioactive matter at or above 1,000,000 times the levels set out in REPPIR Schedule 1

A site licence will be required for the installation and operation of a disposal facility if it is designed or adapted to dispose of quantities of radioactive matter at or above 1 million times the REPPIR level.

In determining which radioactive matter (that is matter which is produced or irradiated in the course of production or use of nuclear fuel as defined in NIR 1971 regulation 3(1)) is to be included in this calculation, ONR will disregard:

- any quantity of irradiated nuclear fuel – installations designed or adapted for storage of such material require a site licence by virtue of NIA 1965 section 1(1)(b) and NIR 1971 regulation 3(6)(b)
- in accordance with NIR 1971 regulation 3(6), any radioactive matter which is stored incidental to carriage
- sealed sources as defined in regulation 2(1) of the Ionising Radiations Regulations 2017

When calculating the quantity of radioactive matter, it will be broken down where possible into individual isotopes or groups of isotopes. For groups of isotopes, the most restrictive REPPIR value should be used. For a mixture of isotopes, ONR considers there to be a ‘bulk quantity’ if the sum of the quotients of the quantity of a radionuclide present (Q_P) divided by the quantity of that radionuclide specified in REPPIR Schedule 1 (Q_R) multiplied by the ‘bulk quantity’ multiplier for the relevant context (Q_{BQ}) exceeds one. Namely –

$$\sum \frac{Q_P}{Q_R Q_{BQ}} > 1$$

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