Environmental Permitting Regulations (England and Wales) 2010

Regulatory Guidance Series, No RSR 3

The regulation of radioactive substances activities – non-nuclear operators

Record of changes

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A QUICK GUIDE

This is our high level guidance on how we regulate non-nuclear radioactive substances activities under the Environmental Permitting (England and Wales) Regulations 2010

This document complements our other regulatory guidance and describes in more detail how we regulate radioactive substances activities – emphasising where there are requirements which are specific to radioactive substances regulation (RSR). We shall continue to expect high standards of operator performance in delivering their environmental protection obligations, including physical security, and to take a proportionate approach when regulating this sector.

We regulate these activities with the primary purpose of protecting the public from harm from the discharges of radioactive waste. We seek also to protect the wider environment. We regulate within a framework of extensive Government Policy, Strategy and Guidance on the management and disposal of radioactive waste. In summary we require operators to protect people and the environment by minimising the generation of radioactive waste, minimising the amount of radioactive waste that has to be discharged into the environment and discharging that waste in ways that minimise the resulting radiological impact on the public and protect the wider environment.

The introduction of RSR into environmental permitting has not altered significantly the legal and policy requirements of the RSR regime. In particular, the Government's Strategy on radioactive waste discharges continues to form the framework for our non-nuclear regulation. RSR continues to be the mechanism by which Government secures a range of international and European commitments and obligations.

There have been some changes to our permitting practices, including consultation, and in terminology. They are explained here.

This document provides an overview of our policy and practice for non-nuclear regulation and is intended for the benefit of operators and for our regulatory officers.
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1. INTRODUCTION

The Environment Agency is responsible in England and Wales, under the Environmental Permitting (England and Wales) Regulations 2010 (EPR), for regulating the keeping and use of radioactive materials, the keeping and use of mobile radioactive apparatus, and the accumulation and disposal of radioactive waste**. '**Disposals' of radioactive waste include discharges into the atmosphere, discharges into the sea, rivers, sewers or groundwater, disposals to land, and disposals by transfer to another site.

We regulate these activities to protect the public from harm from the discharge and disposal of radioactive waste. We also seek to protect the wider environment – that is, species other than humans – from the harmful effects of radiation. We regulate having regard to Government Policy, including statutory guidance on the management and disposal of radioactive substances. The policy framework is summarised in the Government guidance on Radioactive Substances Regulation (RSR). In summary, we require operators to protect people and the environment by minimising the generation of radioactive waste, minimising the amount of radioactive waste that has to be discharged into the environment, discharging that waste in ways that minimise the resulting radiological impact on the public and protect the wider environment, and by using the optimal route for disposal of solid waste. We require operators to assess the radiation dose impact on the public. And we require operators to make adequate security arrangements.

The range of users and uses of and for radioactive substances is wide – and includes those within industrial, commercial, health care and education sectors.

We work with the Health and Safety Executive (HSE - who regulate operational safety); with the Scottish Environment Protection Agency (SEPA) and the Northern Ireland Environment Agency (NIEA), who have similar role to us; and with other organisations who can contribute to the delivery of high standards of environmental protection and protective security.

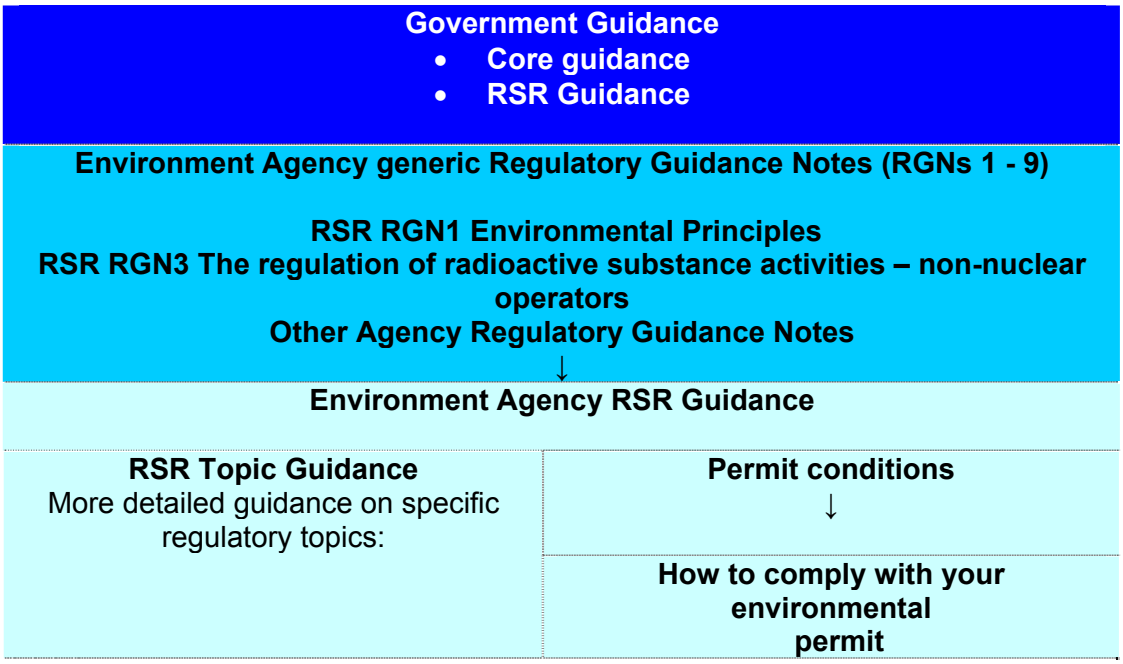
This guidance is part of series of documents which support the EPR. The series includes Government 'Core' Guidance for Environmental Permitting (England and Wales) and on the RSR under EPR. We have published our permitting policy and guidance on the implementation of the environmental permitting regime in general as Regulatory Guidance Notes (RGN 1 – 9) and, here and in the documents referenced here, regulatory guidance on RSR-specific matters for the regulation of non-nuclear operators. The RSR documents fit together as shown in Figure 1.

This document provides an overview of our policy and approach to non-nuclear regulation and is aimed at operators and our regulatory officers. Some aspects are also relevant to nuclear operators (licensees and tenants) where they need to be permitted to keep and use radioactive materials. We will work with those we regulate – in fora such as the Small Users Liaison Group (SULG) – to make further improvements. We will look to develop further guidance on general matters and on specific activities. We will continue to invite feedback on our work – both informally and through customer and stakeholder surveys.

The EPR maintain the Crown exemptions afforded to the Ministry of Defence. We intend to maintain our agreement with the Ministry by which we issue non-statutory

"notifications" and examine compliance under broadly similar arrangements to those we use under the EPR.

Figure 1 The structure of RSR Environmental Permitting Guidance



The Government 'Core' Guidance and RSR Guidance can be found on the Defra web site http://www.defra.gov.uk by searching for Environmental Permitting Regulations.

The Environment Agency's generic RGNs cover the following topics:

RGS, No RGN 1	Understanding the meaning of operator
RGS, No RGN 2	Understanding the meaning of regulated facility
RGS, No RGN 3	Deciding applications are duly made and requests for further information
RGS, No RGN 4	Setting standards for environmental protection
RGS, No RGN 5	Operator competence
RGS, No RGN 6	Determinations involving sites of high public interest
RGS, No RGN 7	Appeals to the Secretary of State or Welsh Ministers
RGS, No RGN 8	Substantial changes in operation at installations, mining waste facilities and other facilities involving solvents and combustion
RGS, No RGN 9	Showing that land and groundwater are protected at: installations, waste facilities, mining waste operations, non-nuclear radioactive substances facilities and mobile apparatus

Where the nature of RSR regulation requires an approach which is different to our generic EPR approaches, the RGNs confirm that – but where the regulatory needs are consistent with other regimes, we have worked to align our RSR permitting and compliance activities with generic EPR approaches.

We have developed our Radioactive Substances Regulation Environmental Principles (REPs) to form a consistent and standardised framework for the assessments and judgements that we must make when regulating radioactive substances. We have published these as RGN RSR1 Environmental Principles. We have developed this principles-based approach to regulation based on the International Atomic Energy Authority (IAEA) approach to safety standards, modified to be more relevant to our regulatory role in relation to the protection of the environment rather than safety.

The Introduction to the REPs describes how we developed them and how, in general terms, we will apply them in practice. In time we aim to develop further guidance to support the consistent application of the principles in practice.

In this document (No RSR 3) we cover:

- the permitting process for non-nuclear operators;
- the principles of radiological protection and protective security and their implementation in practice;
- the implementation of the RSR legal and policy requirements during permitting;
- our work with the public and with other organisations.

On our EPR RSR web pages we include links to the EPR, to the Government Guidance and to the Environment Agency's generic Environmental Permitting Guidance.

Our operational structure remains the same as under RSA93 – with a centralised RSR permit support team and specialist local RSR regulatory teams doing our application determination and regulatory compliance work, and supporting operators and other customer groups in their geographic areas.

2. THE PERMITTING PROCESS

2.1 Introduction

The Government's core guidance and our regulatory guidance notes describe the operation of environmental permitting. The permitting of non-nuclear operators follows the same model - with some necessarily different RSR-specific considerations. We describe these RSR-specific considerations in this chapter.

The introduction of RSR into environmental permitting has resulted in some changes in terminology and definitions and some changes to the application and permitting process. In the main, it has not, however, changed the legal or policy requirements of RSR, and it has not produced any changes in the technical standards to which we regulate. The change to environmental permitting does not alter the nature or scope of what we regulate under RSR. We continue to regulate these activities in relation to the management of radioactive substances. We do not regulate under RSR other matters associated with a radioactive substances activity - for example noise and vibration, or energy efficiency. But we may set conditions in relation to the conventional (that is, non-radioactive) properties of radioactive substances in order to deliver the environmental protection provisions of other legislation that would apply if the substances were not radioactive, for example in relation to wastes being disposed of to land.

2.2 What non-nuclear radioactive substances activities do we regulate?

Under EPR, the RSA93 provisions for "keeping or use" and "accumulation" and "disposal" have been replaced - and essentially replicated - by a number of "activities", as set out in schedule 23 of the EPR, where "activity" is a generic environmental permitting term to describe what is subject to regulation. However, the EPR also provide that registrations and authorisations issued under RSA93 will automatically become environmental permits, and operators do not need to apply to renew them.

For most non-nuclear operators, the relevant activities are:

- where a person uses premises for the purposes of an undertaking and
    - keeps or uses radioactive material on those premises (except where the activity involves mobile radioactive apparatus – see below);
- where a person uses premises for the purposes of an undertaking and
    - accumulates radioactive waste on those premises,
    - disposes of radioactive waste on or from those premises
    - receives radioactive waste for the purposes of disposing of that waste
- where a person keeps or uses mobile radioactive apparatus for
    - testing, measuring or otherwise investigating any of the characteristics of substances or articles; or
    - releasing quantities of radioactive material into the environment or introducing such material into organisms.

The 'keeping or use' of radioactive materials and the 'accumulation' of radioactive waste on a nuclear licensed site (NLS) by a licensee are not activities regulated under the EPR because they are regulated under a Nuclear Installations Act 1965 (NIA65) site licence by the HSE. Licensees do, however, need an environmental permit for any mobile radioactive apparatus (MRA). The EPR define MRA as:

- any apparatus, equipment or appliance or other thing which is radioactive material and
    - is constructed or adapted for being transported from place to place: or
    - is portable and is designed or intended to be used for releasing radioactive material into the environment or introducing it into organisms.

The accumulation of radioactive waste on a NLS by a tenant is not an activity regulated under EPR but tenants do need a permit where they:

- keep or use radioactive material;
- receive radioactive waste for the purposes of disposing of that waste;
- dispose of radioactive waste on or from the premises; or
- use mobile radioactive apparatus.

There is a new activity introduced by the EPR:

- where a person carries out intrusive investigation work or other excavation, construction or building work to

  - determine the suitability of any premises, or
  - enable the use of any premises,

as a place that may be used wholly or substantially for underground disposal of solid radioactive waste.

This provision is not directly relevant to non-nuclear RSR. It has been introduced primarily so that for the proposed geological disposal facility for higher-activity radioactive wastes there can be early regulatory engagement in its development. “Underground disposal” is defined in the EPR in a way that excludes disposal in surface-based facilities such as landfill sites.

You do not need a permit to carry out a radioactive substances activity if there is a relevant radioactive substances Exemption Order and you can comply with the conditions of the Order. Further information can be found on the Department for Energy and Climate Change (DECC) website. We continue to assist DECC with its review of those exemption orders. That work offers the potential to change the type and scope of activities which needs to be permitted. We understand that DECC intends to complete that review by the end of 2010.

2.3 Justification

We can only issue a permit for a radioactive substances activity that relates either to a 'justified practice' or to a work activity not subject to the requirement for justification. Decisions on whether a practice is justified are made by Government and further information can be found on the Department for Energy and Climate Change website. You should not make an application if the Justifying Authority has determined your practice is not justified.

2.4 Water Discharge or Groundwater activities carried on as part of an RSR activity

We expect these circumstances to be rare for non-nuclear operators. The EPR allow certain activities to be carried on as part of other activities as described in Part 2 of RGN 2 “Understanding the meaning of regulated facility” – and, in particular, allow water discharge activities and groundwater activities to be carried on as part of any RSR activity. In practice that can only occur in relation to the disposal of radioactive waste and the use of mobile radioactive apparatus, where radioactive material is released into the environment (that is, ‘tracer’ testing). However, a water discharge or groundwater activity will only be regarded as part of the RSR activity where it results from the operation of a radioactive substances activity, that is it arises directly from the disposal of radioactive waste (or, exceptionally, tracer tests). If there are other discharges to water or groundwater which do not arise from the disposal of radioactive waste then these will not be regarded as part of the radioactive substances activity and will need to be permitted as standalone activities (or as part of an installation). This applies even if these discharges are made through a common pipe.

2.5 Regulated facility and site

'Regulated facility' is a generic term which covers all types of activities under EPR. Regulation 14 requires that permits must include a map, plan or other description of the site showing the geographical extent of the site of the facility. This requirement does not apply to permits in force before the 6th April 2010, nor to permits where the only radioactive substances activity is the keeping and use of mobile radioactive apparatus. Chapter 6 of the Core Guidance and RGN2 provide more information on the meaning of regulated facility and site.

With the exception of mobile radioactive apparatus, the definitions of radioactive substances activity refer to premises used for the purposes of an undertaking. 'Premises' is defined in the EPR as including any land, whether covered by buildings or not, including any place underground and any land covered by water'. 'Undertaking' refers to the wider business, process or activity undertaken by the operator, not the use of radioactive substances or the disposal of radioactive waste. The site of the regulated facility as set out in the site plan should include systems used for the disposal of radioactive waste up to the point of discharge to the environment or where they become the responsibility of another, for example pipelines to sea or controlled waters, or to a public sewer.

For non-nuclear operators, the definition of, and the declared extent of, the premises on which a radioactive substances activity is to be carried out, and the area which must be shown on the site plan submitted with an application, are key issues.

2.6 Premises

You will need a separate permit for each premises where you carry out a radioactive substances activity. What might be considered as a single premises is not always clear-cut (for example, where a number of nearby buildings are involved that are separated by public roads or other land). We will normally consider a group of buildings and/or areas of land to be a single premises where:

- they are in reasonable proximity (usually within a few hundred metres and whether or not separated by public roads);
- they can reasonably be regarded as part of the same unit; and
- a common management system is applied to the activities carried out in them.

2.7 Site Plan

The geographical extent of the site of a non-nuclear regulated facility will normally include all the land within the boundary of the premises, together with any systems used for the disposal of radioactive waste that extend beyond the normally-recognised premises boundary (such as sea pipelines or drains up to their discharge into public sewers).

Where the radioactive substances activities are confined to a limited part of the premises (for example, a single building on a large university campus), the geographical extent can be defined more narrowly. But the site plan must include all areas where radioactive substances are kept, used, disposed of and moved around the site.

The site of the regulated facility is set out in the site plan and to change the boundary of the regulated facility an operator must apply for:

- a variation to increase the size of the site;
- surrender, or partial surrender, to decrease the size of the site.

This guidance describes the approach to defining the site of the regulated facility. There is a different approach for each class of activity (eg installation, waste operation etc), consistent with the regulatory needs. Where there is more than one regulated facility, the total site is made up of the footprints of the individual regulated facilities. We do not expect to issue permits covering RSR activities and other activities immediately - but this remains an aspiration for the medium term. However, to ensure we can make as many permits as possible available to the public, and avoid confusion about which information is sensitive on national security grounds, we will not issue a permit covering different activities on the same site, where the permit for the RSR activity includes protective security requirements .

2.8 Who can we permit – and for which location?

Multi-occupancy

At some premises, notably hospitals and universities, two or more legal entities may share facilities to handle radioactive substances or dispose of radioactive waste. Our usual approach is to issue separate permits to each operator.

We can legally issue a permit to two or more legal persons jointly (whether that group of legal persons forms a partnership or otherwise) - although any group of legal persons applying jointly would have to demonstrate that they would exercise joint control of the regulated facility. However, there may be practical difficulties both for us and the joint operators in terms of enforcement and liability. For example, we would have to serve notices on each joint holder (and each joint holder would have to serve notices jointly on us) and we might prosecute both joint holders where a permit is breached. Legal advice should be taken if the joint arrangements are unclear.

Mobile radioactive apparatus (MRA)

Some uses of radioactive substances require them to be kept and used at more than one location. Where relevant, our permits require that when not in use, MRA shall normally be kept on the premises specified in that permit. It remains our national regulatory approach that a single address, or 'home premises', is specified in relation to this condition. This is to allow effective regulatory control over MRA, by ensuring we know which MRA is based at which premises. Our charging scheme is also aligned to this approach.

Should a user wish to move all MRA held under its permit to a new 'home premises' it can apply to vary its permit. However, should it want to hold some sources at the original 'home premises' base, and others at another, separate premises, then it will need to apply for a new permit for those other premises.

We distinguish a 'home premises' by recognising that it is where the records about the MRA are kept and where MRA is returned to on completion of work – either at the end of

each working day, or at the end of a contract (for which the source may be away from the home premises for several weeks or months).

MRA can be kept temporarily (that is, stored between periods of use) at a 'remote location' (that is, not that one specified by a permit):

- for the duration of work that the operator is carrying out at that location, provided adequately secure facilities are provided. The remote location will normally be occupied by a 3rd party, but could be occupied by the operator itself.

- for the duration of work that the operator is carrying out at some 'other location', where the 'remote location' provides more secure storage than would be available at that 'other location' and where it is geographically more convenient for access to the 'other location' than would be the 'home premises'. The 'other location' will normally be occupied by the operator, but could be occupied by a 3rd party with whom the operator has made an agreement.

MRA can also be 'stored in transit' en route to a work destination.

If an operator who holds several permits for several 'home premises' temporarily moves MRA from one 'home base' to another, it must notify us if that changed location will last for more than 3 months. However, if the move is permanent – that is, the MRA will now be held under the terms of the permit specifying that changed location as the 'home premises' (and that permit provides for that additional MRA to be held or an application for its variation has been made – and records confirming the permanent transfer are made by the transferor), then no notification is necessary. But, if the source is a HASS, a HASS report must be submitted by both transferor and the recipient confirming the movement.

2.9 Application Forms

The EPR require applications to be made on the forms we provide. We have developed a multi-part application form for non-nuclear applicants – consistent with the range of radioactive substances activities you may wish to carry out and the types of application you may need to make. There is guidance for each part of the form. The guidance for part RSR-A sets out which parts you need to complete in which circumstances. We encourage applicants to talk with us before making an application.

Radiological assessments

Some applications require you to complete and submit radiological assessments in support of your proposals. Section 4 in this document summarises the principles of radiological protection. We will use an initial radiological assessment tool to help us determine your application. Your local regulator will make that tool available to you if you ask for it. When we use that tool, we do so to assess the radiological impact of your proposals on humans and on non-human species. If you decide to obtain and use that tool, you need not complete an assessment for non-human species: we will do so, and will consider the combined impact of your proposed releases with those we have already permitted.

2.10 Charging Scheme

We have changed the way we charge for determining applications and for our subsequent compliance work. We continue to set our charges so as to recover the costs of our necessary regulatory work. We have consulted on our proposals for charging for RSR under EPR - and made changes to our approach as a result of responses to that consultation. We have published the charging scheme, following Ministerial approval, together with guidance about how the scheme works in practice. The relevant documents are available for our EPR RSR web pages.

2.11 Variations

The business needs of operators can change – as can our requirements as regulators. It is important that our permits remain fit for their purpose and the EPR and our application process allow for changes to be made to extant permits. The Environmental Permitting Charging Scheme Guidance sets out several types of variation, including administrative, minor technical and normal variations.

2.12 Permit Transfer

The EPR now extend the ability to apply to transfer a permit between operators to non-nuclear permits – previously under RSA93 that ability applied only to a NLS.

The EPR require an application for a transfer to be made jointly by the transferor (the 'old operator') and the transferee (the 'new operator').

2.13 Permit Surrender

The EPR require an operator to apply to surrender a permit, in place of the previous arrangement under RSA93 whereby an operator would have requested that we cancel or revoke a permit. But essentially our regulatory process remains unchanged – we wish to see evidence that sources of radioactivity have been safely and appropriately transferred or disposed of and that there remains no significant residual risk posed by a legacy from the activities carried out on a site.

If you are applying for a new permit and are aware that previous use of radioactive substances on the site has left a legacy of land or groundwater contamination or of orphaned sources, you should provide details of the contamination or radioactive source present. This is because, when you surrender your permit, you will need to meet the surrender tests set out below.

Under the EPR, there are separate provisions in relation to groundwater,. Discharges of radioactive substances to groundwater may constitute a “groundwater activity” under the EPR and Schedules, 2, 3, and 22 set out the relevant provisions. In general, a groundwater activity occurs only where there is a planned and permitted direct or indirect discharge of radioactive wastes to groundwater (for example, direct injection into groundwater or discharge to a soak-away with subsequent percolation to groundwater). The disposal of radioactive waste by burial is considered to be a groundwater activity.

The following may not constitute a groundwater activity under the EPR:

- potential and actual accidental releases, whether of radioactive substances or waste, into groundwater
- existing contamination of groundwater, whether on- or off-site.

The EPR provide for an operator to apply to surrender a permit, although there is no obligation to do so, on permanent cessation of the regulated activities. An operator may apply to surrender the permit for all the regulated activities or apply for partial surrender covering only the regulated activities that have ceased. If an operator wishes to reduce the extent (area) of the premises permitted then it must apply for partial surrender to do so.

Schedule 5, Part 1, para 14(1) of the EPR sets out two tests in relation to surrender:

(a) to avoid a pollution risk resulting from the operation of the regulated facility; and

(b) to return the site of the regulated facility to a satisfactory state, having regard to the state of the site before the facility was put into operation.

2.14 Involving others in application determination

Our Public Participation Statement and RGN 6 (Determinations involving sites of high public interest) describe our policy on working with others and on consultation. We have Working Together Agreements' (WTA) with a number of organisations which set out when we will involve them in our permitting process.

We will advertise, and where appropriate involve others, on all applications for new permits except for those aspects where national security or commercial confidentiality restrictions apply. We will decide whether to consult on applications for variations depending on their environmental impact and the degree of public interest. We have WTAs with the following organisations – and these arrangements are broadly similar to those for non-nuclear applications as under RSA93:

- LACORS
- Water UK
- Natural England/Countryside Council for Wales
- Health Protection Agency/National Public Health Service for Wales
- Food Standards Agency
- Health and Safety Executive
- ACPO

We will advertise by placing summary details – comprising the applicant and the activity it proposes to do – on a dedicated web page. The advertisement will direct readers to the public register (ours and the relevant local authority's). We will place these advertisements on the web promptly upon receipt of an application – and we may not proceed to determine an application until after the advertisement period – 30 working days – has passed. We will take into account any submissions to us as a result of those advertisements.

2.15 Time limits for determining applications

The timescales relevant to non-nuclear applications are below – we can agree longer periods with an applicant.

- four months for an application for a new environmental permit
- four months for an application to vary a permit where public participation is required.
- three months for other applications to vary a permit
- three months for applications to surrender a permit
- two months for applications to transfer a permit

This is a change from the RSA93 provisions, which did not specify a time limit for determining variations.

2.16 Permit types & permit conditions

We have adopted a changed structure for the suite of permit types we issue – principally to ensure that information which is sensitive on national security grounds is kept together, to help ensure it is protected. Our other permits, about the keeping and use of radioactive material in the form of open sources and about the receipt, accumulation and disposal of radioactive waste, will continue to be publicly available. Our suite of EPR RSR permits now comprise:

- Publicly Available permits – open source keeping & use and radioactive waste receipt, accumulation and disposal
- Publicly Available permits – open source keeping & use only
- Security permits
    - Standard rule
    - Sealed sources

Our standard rules permit and process replace the previous fixed condition registration permit and process – and authorise the keeping and use of category 5 sealed sources on a single premises. Our security permits cover all those circumstances in which we need to authorise a radioactive substances activity involving a sealed source, and therefore include:

- sealed sources, single premises
- sealed sources, single premises and radioactive waste receipt, accumulation and disposal
- mobile radioactive apparatus

We have reviewed and edited the conditions we will include in our permits in the different circumstances we regulate. Our aim has been to retain conditions where they provide a useful structure to your management of your activities and where they concern environmental or security outcomes of importance. Some conditions directly transpose the requirements of EU Directives. In all, our permit conditions are designed to continue to deliver a proportionate system of regulation. Our How to Comply guidance, summarised below, whilst structured to reflect the new permit structure and content, should also be of value to holders of permits issued under RSA93.

We have worked to make sure that we ask only for information where there is a clear and important need. We have retained a requirement for those operators who make or use HASS to report to us on the details of each HASS they receive – so that we can maintain the national HASS inventory. The EPR provide for us to ask you for Pollution Inventory returns by sending to you a Notice – whereas previously we had achieved this through a permit condition. This will not change what, and by when, we ask you to tell us about your releases of radioactivity to the environment.

2.17 Consolidation of permits

Issue of a consolidated permit

A 'consolidated permit' is one which incorporates all the changes made since issue. We can issue a consolidated permit following;

- variation (either at the operator's request or by Agency-initiated variation)
- transfer in full or partial transfer to the transferor; and
- partial surrender.

We can also issue a consolidated permit which combines two or more previous permits (see "Consolidation", below)..

Where we issue a consolidated permit we will also issue a notice specifying the changes made as result of the related application .

As a matter of policy we will normally issue a consolidated permit and notice specifying changes for all types of applications (except for new permits, and for variations which result only in very minor changes or corrections) because:

- this ensures that we and operators have one document incorporating all changes to date; and
- it allows us to issue the same format of permit and notice, regardless of the type of application.

These arrangements are summarised below.

Application type	**template**
New application	permit (several variants, dependent upon permitting need)
Variation	consolidated permit and notice of variation or stand alone variation notice
Partial transfer	'new' permit to the transferee (with new reference number) and consolidated permit and notice of variation to the transferor
Full transfer	permit to the transferee (with new reference number) and with the option for the issue of a consolidated permit where necessary
Partial surrender	consolidated permit and notice of variation
Surrender	surrender notice

Consolidation

If the operator holds two or more permits issued under RSA93 it may be possible to combine these into one permit, subject to our agreement. This can happen:

- as part of a transfer application;
- on the application of the operator; or
- on the initiation of the Agency.

We can in principle combine:
- a permit for keeping and use of open sources with one for accumulation and disposal of radioactive waste; or
- a permit for sealed sources with one for mobile radioactive apparatus (where that apparatus only contains sealed sources).

We would then issue a consolidated permit subject to the same conditions as the previous permits, and a notice of variation setting out any changes necessary to take account of the consolidation.

We do not intend to combine RSR permits for sealed sources and other types of permits, or, in the case of non-nuclear operators, to combine RSR permits with any non-RSR permits at present.

2.18 Decision documents

Our regulators have always recorded the basis for their determination decisions. We will now capture those decisions – and therefore basis on which we have determined an application – within a Decision Document, which we will place on the Public Register where information security constraints allow that.

2.19 Information Security

Our security permits and associated application forms are marked “Restricted - regulatory” in accordance with the Government Protective Marking System. The unauthorised disclosure of the information they contain could facilitate the commission of serious crime – in particular by terrorists. They are for use only by those people within operators’ organisations who need reasonable access to them, to ensure compliance with the conditions of the permit, and trusted contacts who advise you – such as your Radiation Protection Adviser. In particular, to ensure compliance with the objectives of the Government Protective Marking System you must:

- not copy it to other third parties without consulting the Environment Agency.
- lock it in a lockable cabinet or container when it is not in use.
- make those who access it aware of the marking and the need to protect the information from unauthorised disclosure and loss.
- if you move it around, use a sealed envelope and do not mark the envelope “Restricted”. If you post it, use “Royal Mail Special Delivery Next Day”.
- not e-mail it.

If you currently have a RSA93 permit relating to sealed sources, there will be no requirement from 6 April 2010 to post that permit on the premises and we encourage you not to post it. Those permits also require that you post the name of the relevant competent person alongside the permit – we will not enforce that condition for sealed source permits. Newly issued permits will not require security permits to be posted,

although you will still need to make sure that those in your organisation who need to know about its obligation can have ready access.

2.20 Public Registers

We will normally put all the information in your application on a public register of environmental information. However, we may not include certain information in the public register if this is in the interests of national security, or because the information is confidential.

You can ask for information to be accepted as confidential by enclosing a letter with your application giving your reasons. If we agree with your request, we will tell you and not include the information in the public register. If we do not agree with your request, we will let you know how to appeal against our decision, or you can withdraw your application.

You can tell the Secretary of State that you believe including information on a public register would not be in the interests of national security – but you need not do, as explained below, merely because it concerns sealed sources. You must enclose a letter with your application telling us that you have told the Secretary of State and you must still include the information in your application. We will not include the information in the public register unless the Secretary of State decides that it should be included.

We will always exclude all applications about sealed sources, including mobile radioactive apparatus, from the public register – because the Secretary of State had told us to. This means also that applications relating to sealed sources must be made separately – from any other radioactive substances activity application - and must not be submitted electronically. So if, for example, you are applying for a new sealed source permit and a new open source & radioactive waste permit at the same time, you will need to send two separate Parts RSR-A and two separate Parts RSR-F, together with the appropriate Parts RSR-B. This will provide us two complete applications, only one of which we will make publicly available.

3. Compliance Processes

3.1 How to Comply (HTC) Guidance

We will maintain and publish guidance about how to secure and demonstrate compliance with our permit conditions. If you meet those conditions, we consider you will minimise the risk of harming the environment or of damaging or losing a radioactive sealed source, or having one stolen. We have written this guidance to help you meet those conditions – and show that you have met them.

This guidance incorporates information which was previously contained within our Radioactive Substances Act Guidance (RASAG) and within our High Activity Sealed Source (HASS) guidance. We will separately provide any remaining material from those documents which we think is not suitable for our HTC guidance.

For most non-nuclear operators, we consider that any increase in pollution risks as a result of climate change is unlikely to be a significant problem, either because the premises are not at risk of flooding or because the impact of flooding would be insignificant. But we recommend you read the Environment Agency's general guidance

on Flood Risk Management and our specific guidance on radioactive substances – both of which are available from our web site.

3.2 Assessing compliance & enforcement

We will assess an operator's compliance with permit conditions using a range of measures including site inspections, audits and the assessment of information provided to us in accordance with permit conditions or that may otherwise have been provided. When we undertake a compliance assessment activity we will record the findings on a Radioactive Substances Compliance Assessment Report Form (RASCAR1). The completed form is copied to the operator and placed on the public register, subject to national security and commercial confidentiality considerations.

Where non-compliances are identified there are a range of enforcement measures available to us. We are guided in the actions that we take by the significance and nature of the non-compliance and our Enforcement and Prosecution policy.

In our compliance and enforcement work we seek to comply with the Regulators' Compliance Code.

3.3 Periodic Review

Section 34 of the EPR requires the Environment Agency to carry out periodic reviews of permits. The maximum period between reviews is not specified but we have adopted a maximum period of 4 years. The purpose of the review is to check whether permit conditions continue to reflect appropriate standards and remain adequate in light of experience and new knowledge. A review may mean that we ask an operator to provide additional information in support of the review. If a permit relates to category 1 to 4 sealed sources, we will seek the views of a Police Counter Terrorist Security Adviser, unless this has been done recently.

Our assessment will include checking whether the permit:

- correctly reflects the operator's name and address;
- is based on a suitable permit template;
- has appropriate conditions necessary for the security of sealed sources;
- contains limits and conditions that properly reflect current regulatory practice and the use of BAT;
- is supported by an appropriate and recent radiological impact assessment, and that the assessed radiological impact remains acceptable against current standards.

The outcome of our review will be recommendations on the action that is required to bring the current permit up-to-date. Recommendations for further action may include:

- requesting that the operator applies for variation to the conditions and limits of the current permit to reflect changes in operations, standards of radiological protection and radioactive waste management and security;
- requesting that the operator applies for a variation to the permit to reflect minor administrative changes such as change of company name where the company registration is unchanged;
- requesting that an operator applies to surrender the permit where radioactive substances activities have ceased;
- replacement of permits issued under RSA93 by a new EPR RSR permit ;
- no further action.

Matters identified during the review may result in the need to take other actions, such as enforcement.

4. PRINCIPLES of RADIOLOGICAL PROTECTION

In this section we describe the principles of radiological protection, based on the recommendations of the International Commission on Radiological Protection (ICRP). The DECC RSR guidance explains how these principles are incorporated into European and UK law and we describe how these are implemented in practice through the EPR regime in Section 5. We have described these principles here because they, and the relevant legislation and Government policies, lead to a number of RSR-specific regulatory requirements and approaches to the permitting of RSR activities.

The current legislation is based on the *1990 Recommendations of the International Commission on Radiological Protection (ICRP60)*. ICRP is a non-governmental scientific organisation which has been publishing recommendations for protection against ionising radiations for several decades. These were re-affirmed, and their application to disposals of radioactive waste clarified, by ICRP Publication 77 *(Radiological protection policy for the disposal of radioactive waste, adopted by ICRP in May 1997*).

In December 2007, ICRP published its 2007 Recommendations, which update the 1990 Recommendations. The new Recommendations do not present a change in radiological protection objectives but aim to take account of new biological and physical information and of trends in setting radiation safety standards. ICRP has also aimed to improve and streamline the presentation of the Recommendations. The Health Protection Agency (HPA) has reviewed and published its conclusions on the Application of the 2007 ICRP recommendations to the UK . The 2007 Recommendations have not at present been adopted into UK policy and legislation.

For all human actions or practices that add to radiation exposure, the system of protection recommended by ICRP in its 1990 Recommendations is based on the following principles:

(a) no practice involving exposure to radiation should be adopted unless it produces sufficient benefit to the exposed individuals or to society to offset the radiation detriment it causes (the justification of a practice). ICRP 60 states

that: 'The Commission recommends that, when practices involving exposure, or potential exposure, to radiation are being considered, the radiation detriment should be explicitly included in the process of choice. The detriment to be considered is not confined to that associated with the radiation - it includes other detriments and the costs of the practice. Often, the radiation detriment will be a small part of the total. The justification of a practice thus goes far beyond the scope of radiological protection.ICRP77 states that: 'The Commission's definition of the justification of a practice requires only that the net benefit of the practice, including the waste management, be positive. The selection of the most appropriate practice goes beyond the scope of the Commission's recommendations." In the UK decisions on justification are a matter for Government under the Justification of Practices Involving Ionising Radiation Regulations 2004 – see para 1.9 and 3.11 of the Government RSR Guidance. We will only grant a permit if the practice has been accepted as "justified" by the Government

(b) in relation to any particular source within a practice, the magnitude of individual doses, the number of people exposed, and the likelihood of incurring exposures where these are not certain to be received should all be kept as low as reasonably achievable, economic and social factors being taken into account. This procedure should be constrained by restrictions on the doses to individuals ('dose constraints'), or the risks to individuals in the case of potential exposures ('risk constraints'), so as to limit the inequity likely to result from the inherent economic and social judgements (the **optimisation** of protection);

(c) the exposure of individuals resulting from the combination of all the relevant practices should be subject to dose limits, or to some control of risk in the case of potential exposures. These are aimed at ensuring that no individual is exposed to radiation risks that are judged to be unacceptable from these practices in any normal circumstances. Not all sources are susceptible to control by action at the source and it is necessary to specify the sources to be included as relevant before selecting a dose limit (individual dose and risk **limits**).

Dose limits are set at a level intended to prevent those radiation effects in humans which are known to occur above a certain level or threshold of dose (deterministic effects) and to ensure that the incidence of those radiation effects for which it is assumed that there is no threshold and that the risk of causing the effect increases with the level of the radiation dose (stochastic effects) is not at an unacceptable level. Application of the optimisation principle and the use of constraints, which are set below dose limits, further reduces this risk to as low as reasonably achievable.

ICRP uses the term 'intervention' to describe those human activities which decrease overall exposure to radiation by removing existing sources of exposure, modifying pathways of exposure, or reducing the number of exposed individuals (e.g. actions to deal with an accident that has released radioactive material to the environment, or with unacceptably high levels of natural radiation). Intervention can be either at the source of the exposure or in the environment, where it may for instance restrict individuals' freedom of action. The system of protection recommended by ICRP for such situations is based on the following principles:

(a) the proposed intervention should do more good than harm, i.e. the reduction in detriment resulting from the reduction in dose should be sufficient to justify the harm and the costs, including social costs, of the intervention;
(b) the form, scale, and duration of the intervention should be optimised so that the net benefit of the reduction of dose, i.e. the benefit of the reduction in radiation detriment, less the detriment associated with the intervention, should be maximised.

Our document Principles for the Assessment of Prospective Public Doses sets out principles and guidance for the assessment of ionising radiation doses to the public arising from planned discharges to the atmosphere and to the aquatic environment. The results of assessments undertaken in accordance with these principles and guidance will be used as an input into the process of determining whether discharges of radioactive waste to the environment should be authorised. This document has been developed by the Environment Agencies in collaboration with the HPA and the Food Standards Agency (FSA).

We will also carry out an assessment of the doses to reference flora and fauna that might arise from discharges at the proposed limits.

A full framework for radiological protection of non-human species is still under development. In the meantime, we have developed, in collaboration with English Nature (now Natural England) and the Countryside Council for Wales and others, an interim assessment approach. This uses models of the behaviour and transfer of radionuclides within ecosystems to predict environmental concentrations, from which the radiation doses to reference organisms can be estimated. The approach is set out in:

- *Impact Assessment of Ionising Radiation on Wildlife* (Environment Agency R&D Publication 128, 2001 (updated March 2003)); and *Habitats Regulations for Stage 3 Assessments: Radioactive Substances Authorisations* (Environment Agency R&D Technical Report P3-101/SP1a, 2003).

These doses can then be compared to 'guideline values' to assess the level of risk to flora and fauna. The EC funded FASSET project concluded that the threshold for statistically significant effects on individual organisms is about 100 microGy/hour. Allowing for the dose rate from natural background, which is at most about 60 µGy/h in European ecosystems, we have adopted a value of 40 µGy/hr as an assessment threshold below which no further regulatory attention is warranted.

The interim assessment approach was developed primarily to enable us to meet our obligations under the Habitats Regulations but can also be used to demonstrate that proposed discharges will not have a significant impact on other designated areas and ecosystems in general. The EC funded ERICA project has developed the approach further. The results of the ERICA project are being incorporated into our assessment framework. The output from the ICRP's Committee 5 will also be taken into consideration during our assessments.

5. RADIOLOGICAL PROTECTION AND OPTIMISATION IN PRACTICE

5.1 Statutory and permit requirements

In this section we describe how the principles of radiological protection, that is justification, optimisation and compliance with limits, are implemented through the EPR. As already noted, the issue of justification is a matter for Government. The requirements for optimisation (ALARA) and dose limits are set out in Part 3 of Schedule 23 of the EPR, which implement the corresponding requirements of the Basic Safety Standards Directive (BSSD), namely

1 In respect of a radioactive substances activity that relates to radioactive waste, the regulator must exercise its relevant functions to ensure that—

(a) all exposures to ionising radiation of any member of the public and of the population as a whole resulting from the disposal of radioactive waste are kept as low as reasonably achievable, taking into account economic and social factors; and

(b) the sum of the doses resulting from the exposure of any member of the public to ionising radiation should not exceed the dose limits set out in Article 13 of the Basic Safety Standards Directive subject to the exclusions set out in Article 6(4) of that Directive.

2(1) In exercising those relevant functions in relation to the planning stage of radiation protection, the regulator must have regard to the following maximum doses to individuals which may result from a defined source—

(a) 0.3 millisieverts per year from any source from which radioactive discharges are first made on or after 13 May 2000; or

(b) 0.5 millisieverts per year from the discharges from any single site.

3 In exercising those relevant functions, the regulator must observe the following requirements of the Basic Safety Standards Directive—

(a) in estimating effective dose and equivalent dose, Articles 15 and 16;

(b) n estimating population doses, Article 45; and
(c) in relation to the responsibilities of undertakings, Article 47

These requirements are placed on the regulator. We give effect to these requirements through permit conditions. The optimisation requirement (ALARA) is achieved through the use of the following permit conditions which have regard to Government Guidance concerning the regulation of radioactive discharges into the environment.

2.*3.1 The operator shall use the best available techniques to minimise the activity of radioactive waste produced on the premises that will require disposal of on or from the premises..*

2.3.2 The operator shall use the best available techniques in respect of the disposal of radioactive waste pursuant to this permit to:

(a) *minimise the activity of gaseous and aqueous radioactive waste disposed of by discharge to the environment;*
(b) *minimise the volume of radioactive waste disposed of by transfer to other premises;*

(c) *dispose of radioactive waste at times, in a form, and in a manner so as to minimise the radiological effects on the environment and members of the public.*

These conditions, taken together with any specific conditions in relation to the use of best available techniques, deliver the provisions in the EPR about optimisation and the corresponding provisions of the BSSD. We use other permit conditions to give effect to the other requirements arising from Article 47 of the BSSD.

5.2 Use of BAT

In this and other guidance, we describe the measures or techniques that an operator uses or proposes to use to achieve an optimised outcome as "best available techniques" (BAT). BAT has, through the recent Statutory Guidance, replaced the predecessor terms of "best practicable means" (BPM) and "best practicable environmental option" (BPEO) in England and Wales. Ministers have stated in the Statutory Guidance to the Environment Agency on "the regulation of radioactive discharges into the environment" that BAT will "deliver the equivalent level of environmental protection as achieved until now by the use of BPM and BPEO"

There is no statutory definition of BAT as it applies to RSR activities. The Statutory Guidance explains that Ministers consider the PPC and OSPAR definitions of BAT to be essentially the same. The Government's RSR guidance adopts the OSPAR BAT definition and we will use that definition – see Annex A - in our permits.

The adoption of BAT in RSR does <u>not</u> mean that:

- in general, the requirements of the PPC Directive have been applied to RSR; nor
- specifically, the approach to BAT is the same in both regimes.

There are significant differences between how BAT is determined in PPC and RSR, because of the different legal and policy requirements of these regimes. There is also a wide body of detailed technical standards developed for PPC through the European BREF notes, which are a requirement of the PPC Directive. Such European standards are not presently available for RSR. In RSR, we use a principle-based approach and are developing this further through the REPs and other supporting guidance. Adoption of BAT is not intended to change practices within RSR and consequently differences will remain between RSR and PPC in how BAT is approached and demonstrated

5.3 What does "optimisation" involve in practice?

The principle of optimisation applies specifically to radiological risks to people in every situation where radiation could cause damage or harm. 'Optimisation' (keeping exposures as low as reasonably achievable) applies only to radiological risks to people. Other living organisms must also be protected from radiological hazards but there is no optimisation requirement.

Optimisation decisions balance the detriment or harm associated with the radiological risk, together with other benefits and detriments (economic, human, societal, political, etc.) associated with disposing of the radioactive waste, both at the time the decisions are taken and in the future, and the resources available for protecting people and the environment. Optimisation decisions are constrained by the circumstances prevailing at the time and must take into consideration and be consistent with the relevant legislation. Optimisation needs to be viewed as part of a bigger picture, recognising that there will be competing claims for limited funds, and that there will be risks associated with any way

of managing radioactive waste. The result of optimisation provides a radiological risk at a suitably low level, but not necessarily the option with the lowest possible radiological risk. Dose limits and constraints are aimed at ensuring that the radiological risk is at a suitably low level.

'Optimisation' means judgements have to be made about the relative significance of various issues, including:

- the number of people (workers and the public) and other environmental targets that may be exposed to radiological risk;
- the chance they could be exposed to radiation, where exposure is not certain to happen;
- the magnitude and distribution in time and space of radiation doses that they will or could receive;
- issues similar to those above, but relating to non-radiological hazards;
- economic, societal and environmental factors;
- technical viability;
- uncertainties in any of the above.

Within the wider field of radiological protection, different regimes use different terminology and have their own guidance on this topic, for example, reducing risks as low as reasonably practicable (ALARP) (HSE), use of best practicable means (BPM) and best practicable environment option (BPEO) (previously in the UK but now only in Scotland and Northern Ireland) and now best available techniques (BAT) in England and Wales. However, all of the above involve the same process, that is making a judgement between options by comparing benefits which include safety, environmental protection and costs in terms of time, effort or money.

5.4 Guidance on the process of optimisation

We have provided general guidance on the process of optimisation in RSR Principles of optimisation. In standard EPR terminology, this would be called "risk assessment". However, for consistency within the field of radiological protection and with other regulators we refer to this as optimisation and the use of BAT, where BAT is the range of techniques whose use delivers an optimised outcome. We have developed a principles-based approach to optimisation to

- give operators flexibility to develop joint or integrated assessments which cover worker safety as well as environmental impacts (that is, address our and HSE's requirements jointly);
- allow cross border operators to use a common approach in Scotland and in England and Wales.

Our guidance; RSR Principles of Optimisation, together with the other guidance on How to Comply with EPR RSR permits and on the assessment of radiological impacts, sets out how operators should approach optimisation and the selection of BAT. There is also separate detailed guidance on near surface and deep geological disposal facilities for solid radioactive waste.

5.6 Scope of optimisation

The requirement for optimisation cover all aspects of the carrying-on of an activity leading to the generation and disposal of radioactive waste, and BAT means both the“ technology used and the way in which the installation is designed, built, maintained, operated and dismantled.

Therefore our conditions concerning optimisation apply to all aspects of radioactive substance activities - not just waste management processes - which have a bearing on radioactive waste production and which would thus relate to the foreseeable disposal of those radioactive wastes at some stage

6. Security Requirements for Radioactive Sources

The EPR replace the HASS Regulations/Directions which implemented the HASS Directive. Before we issue permits for certain sources, we must be satisfied that Operators have made adequate security arrangements. The requirements are appropriate to the sources and practices for which they are used. The details of the method of categorising sources and the security requirements are specified in a document written by the National Counter Terrorism Security Office (NaCTSO) and available from local Police Counter Terrorism Security Advisers.

Where appropriate, we must consult the police, security services or other appropriate persons on site security, have regard to any advice given by them and we must impose appropriate environmental permit conditions concerning site security.

Further guidance on this is available in our RASAG guidance from our web site.

7. REGULATORY REQUIREMENTS IN RELATION TO PERMITTING AND PERMIT CONDITIONS

This chapter describes certain legal and policy requirements which we must take into consideration when permitting, in particular where these differ from previous practices under RSA93.

<u>Receipts and disposals of radioactive waste.</u>

The EPR have changed certain provisions that were in RSA93 about informing local authorities about waste transfers and disposals. The result is that it is no longer necessary in most cases to identify, in a consignor’s permit, the specific site where radioactive waste will be disposed of. Permits may allow transfer of radioactive waste to any premises for which the operator holds an appropriate permit to receive, accumulate or dispose of radioactive waste.(in the case of disposals of solid Low-Volume Very Low Level Waste, and following our previous approach under RSA93, the receiving site will not require a permit for a radioactive substances activity under EPR). In RSR permits for sites receiving radioactive waste for final disposal, we will include a condition requiring the site operator to inform their local authorities the first time they receive radioactive waste from a new consignor.

These changes do not otherwise alter the basis of our regulation. Operators should continue to demonstrate that their proposals for waste disposal, including off-site transfers, represent an optimised approach for all disposals. In permitting disposals, we will normally:

- specify how waste is to be disposed of (eg solid waste to incineration) ; and
- set limits and conditions on the amount and nature of the waste, where appropriate.
- require operators who accept waste for final disposal to notify their local authority on the first occasion they accept waste from a new consignor.

We retain the discretion to identify a specific consignee site for accumulation and/or disposal of radioactive waste as necessary to meet the requirements of Government policy.

Permit conditions relating to BAT

The requirement for optimisation and the use of BAT to achieve ALARA are on-going requirements, which operators must deliver in day to day operation. We will place conditions in the permit requiring use of BAT; this is not a change as these are essentially the same conditions as the previous conditions about the use of BPM. In our EPR RSR permits we continue the obligation for operators to brigade together their work to demonstrate how they decide on and implement BAT – which we have now given the name 'Environment Case'. This is not a new obligation.

Setting discharge limits based on BAT

We set discharge limits, based on the use of BAT by operators, at the minimum necessary levels to permit "normal" operation or decommissioning of a facility. Limits will be based on the routine expected level of discharges from normal operation of the facility using BAT, with sufficient headroom to cover operational fluctuations, trends and events that are expected to occur over the likely lifetime of the facility., Where there are predictable changes in discharges over the lifetime of a facility, limits should be set and from time to time varied so as to continually exercise control as described above. Limits should not be set on the basis of the predicted worst case discharges over the lifetime of the facility, where these are not expected to arise during current operations

"Normal" depends both on what the facility is designed to manage and on what discharges are likely to result from activities undertaken over the lifetime of the facility. It is the responsibility of the operator to identify the relevant fluctuations, trends and events affecting discharges and to request and support sufficient allowance to allow discharge limits to be set as described above.

Flexibility in setting discharge limits may be necessary in certain cases, for example to ensure the safe and timely decommissioning of redundant facilities, clean-up of the historic legacy of radioactive wastes, security of energy supply including through permitted new nuclear build, maintenance of defence nuclear and non-nuclear capabilities, and the use of radionuclides in medicine.

When considering the limits on discharges to the environment to be included in a permit, we will carry out an assessment of the doses to members of the public that might arise from the discharges at the proposed limits using the approach described in Principles for Prospective Dose Assessment. This is to ensure that the doses are consistent with the

dose limits and dose constraints. The Environment Agency will seek the advice of the FSA on the terms of any permit that we propose to grant for a nuclear site. It is expected that the FSA's response will include its own assessment of doses to members of the public.

As set out in the Statutory Guidance, where the prospective dose to the most exposed group of members of the public is below 10 μSv/yr from the overall discharges of an regulated facility, we will not seek to reduce further the discharge limits that are in place, provided that the holder of the environmental permit applies and continues to apply BAT

The 10μSv/y figure is not a dose target, or a dose limit, or a threshold, or a radiation standard. It represents an appropriate level of dose, below which discharge limits need not be reduced further if the operator is continuing to apply BAT. This has superseded the "threshold for optimisation" of 20 μSv/yr set out at paragraph 73 of Cm 2919, *Review of Radioactive Waste Management Policy – Final Conclusions,* July 1995.

Open sources – permit conditions

For now, we will continue to place in our permits numerical limits on the type and quantity of radioactive material in the form of open sources which may be kept or used. We will also apply conditions based on BAT – reflecting the relationship between the inventory of such radioactive material and the arisings of radioactive waste. We plan to explore whether there might be merit in ceasing to include numerical limits in our permits for keeping and use of open sources, to establish whether that would allow you better to plan and management your business whilst retaining the necessary regulatory controls.

ANNEX A DEFINITION OF BAT

BAT is defined as

The use of the best available techniques will emphasise the use of non-waste technology, if available.

The term "best available techniques" means the latest stage of development (state of the art) of processes, of facilities or of methods of operation which indicate the practical suitability of a particular measure for limiting discharges, emissions and waste. In determining whether a set of processes, facilities and methods of operation constitute the best available techniques in general or individual cases, special consideration will be given to:

a) comparable processes, facilities or methods of operation which have recently been successfully tried out;

b) technological advances and changes in scientific knowledge and understanding;

c) the economic feasibility of such techniques;

d) time limits for installation in both new and existing plants;

e) the nature and volume of the discharges and emissions concerned.

It therefore follows that what is "best available techniques" for a particular process will change with time in the light of technological advances, economic and social factors, as well as changes in scientific knowledge and understanding.

If the reduction of discharges and emissions resulting from the use of best available techniques does not lead to environmentally acceptable results, additional measures have to be applied.

"Techniques" include both the technology used and the way in which the installation is designed, built, maintained, operated and dismantled.

GLOSSARY AND ACRONYMS

Term	Meaning
ALARA	As Low as Reasonably Achievable (economic and social factors being taken into account).
BAT	Best Available Techniques - see Annex A for full definition
BPEO	Best Practicable Environmental Option
BPM	Best Practicable Means.
BSSD	Basic Safety Standard Directive (Directive 96/29/EURATOM)
DECC	Department of Energy and Climate Change This is the UK Government Department having policy responsibility for Radioactive Substances Regulation in England
EPR	The Environmental Permitting (England and Wales) Regulations 2010
FSA	Food Standards Agency.
HSE	Health and Safety Executive
HPA	Health Protection Agency
ICRP	International Commission on Radiological Protection
ILW	Intermediate Level Radioactive Waste
LLW	Low Level Radioactive Waste
LV-VLLW	Low Volume Very Low Level Radioactive Waste
Licensee	An operator licensed under NIA65
NIA65	The Nuclear Installations Act 1965
NIEA	Northern Ireland Environment Agency
NLS	Nuclear Licensed Site : a site licensed under the Nuclear Installations Act 1965.
OSPAR	Oslo and Paris Convention for the protection of the marine environment in the north-east Atlantic. The UK is a signatory to this Convention, which commits the UK to reducing discharges of pollution, including radioactive substances, to the sea and hence reducing marine concentration of pollutants.
Regulated facility	A collective term for the range of activities permitted under the EPR
REPs	Radioactive Substances Regulation – Environmental Principles. Environment Agency guidance which sets out, at a high level, the principles which the Environment Agency applies to RSR.
RSR	Radioactive Substances Regulation
SEPA	Scottish Environment Protection Agency
Tenant	An operator on a nuclear licensed site but who is not a licensee.