Cyfoeth Naturiol Cymru
Natural Resources Wales

Environment Agency

enhancing... improving... cleaning... restoring...
changing... tackling... protecting... reducing...
create a better place... influencing... inspiring...
advising... managing... adapting...

The decommissioning of nuclear facilities.

Joint guidance from the Environment Agency and Natural Resources Wales

Environmental Permitting Regulations (England and Wales) 2010

Record of changes

Version	Date	Change
1.0	November 2013	

Published by:

Environment Agency
Horizon House
Deanery Road
Bristol BS1 5AH
Tel: 03708 506506
Email: enquiries@environment-agency.gov.uk
www.environment-agency.gov.uk

A QUICK GUIDE

The Environment Agency and Natural Resources Wales have published this document as guidance to regulators on our expectations for the management of the generation and disposal of radioactive waste during the decommissioning of nuclear facilities. It covers both our roles in

- permitting the disposal of radioactive waste under Radioactive Substances Regulation (RSR); and
- advising the Office for Nuclear Regulation (ONR) on operators' decommissioning arrangements.

This guidance does not cover wider aspects of decommissioning that are the responsibility of the Nuclear Decommissioning Authority (NDA). This guidance is supplementary to our RSR regulatory principles and other guidance on nuclear facilities and should be read within the wider context of those documents.

We may also regulate other aspects of decommissioning and other discharges to the environmental under separate regulatory provisions, eg Control of Major Accident Hazards (COMAH) or the Industrial Emissions Directive (IED). These matters are not covered by this guidance: information on them can be found on our website. We will advise ONR and operators about these other requirements as relevant.

CONTENTS

1 Introduction

1. The Environment Agency and Natural Resources Wales have published this document as guidance to regulators on our expectations for the management of the generation and disposal of radioactive waste during the decommissioning of nuclear facilities. It covers both our roles in

   - permitting the disposal of radioactive waste under Radioactive Substances Regulation (RSR)[1]; and
   - advising the Office for Nuclear Regulation (ONR) on operators' decommissioning arrangements.

   This guidance does not cover wider aspects of decommissioning that are the responsibility of the Nuclear Decommissioning Authority (NDA). This guidance is supplementary to our RSR regulatory principles and other guidance on nuclear facilities and should be read within the wider context of those documents.

2. We may also regulate other aspects of decommissioning and other discharges to the environment under separate regulatory provisions, eg Control of Major Accident Hazards (COMAH) or the Industrial Emissions Directive (IED). These matters are not covered by this guidance: information on them can be found on our website. We will advise ONR and operators about these other requirements as relevant.

3. By decommissioning we mean

   "*the administrative and technical actions taken to allow the removal of some or all of the regulatory controls from a facility[2] (except a disposal facility for radioactive waste)"* [3]

   and decommissioning is considered complete

   "*when the approved end state of the facility has been reached. This end state is the result of conducting decontamination and/or dismantlement leading to the release of the facility from regulatory control, with or without restrictions on future use".*[4]

   In this context "regulatory control" should be taken as the site licence issued by ONR under the Nuclear Installations Act 1965, and the "release from regulatory control" as site de-licensing and the ending of the period of responsibility[5].

4. The scope of this guidance covers preparation for decommissioning, the transition from operation to decommissioning, and decommissioning including any stage of care and maintenance, site remediation and restoration. For the purposes of this guidance, "decommissioning" starts on the cessation of operation of a facility. However it is recognised that the process of decommissioning itself may involve the construction and operation of new facilities to undertake decommissioning and site restoration and that

[1] This is implemented through the Environmental Permitting (England and Wales) Regulations 2010, as amended.
[2] Facility is defined in the REPS as "part of a site that is identified as being a separate unit for the purposes of radioactive substance regulation. A facility may be a single plant, a group of plants or an area containing various buildings"
[3] As defined in draft IAEA safety requirements DS450 "Decommissioning of facilities".
[4] As footnote 3
[5] These are separate steps, but generally referred to collectively as "de-licensing".

on a single site there may be both operational facilities and facilities being decommissioned.

5. This document provides guidance on decommissioning, in addition to that in our RSR Principles and other guidance, under the headings of

- Background to decommissioning;
- Our fundamental objectives for decommissioning;
- RSR permit considerations;
- ONR decommissioning arrangements.

6. ONR has produced guidance on decommissioning: ONR Technical Assessment Guide (TAG) 026. This document describes the various statutory and other provisions relating to decommissioning as regulated by ONR and sets out ONR's expectations for decommissioning. These matters are not repeated here and regulators should consult the TAG for this information. We are consultees to ONR on the assessment of operators' decommissioning arrangements under the site licence and other provisions.

7. In this guidance we use the term "decommissioning arrangements" to refer to all of an operator's policies, procedures, strategies, plans etc relevant to how decommissioning is planned, managed and carried on, however these are organised and labelled by the operator, in accordance with ONR's requirements. Terms such as management arrangements, radioactive waste management arrangements (RWMAs) and environmental permits refer to requirements under RSR and other environmental legislation.

2 Background to decommissioning

8. This chapters covers

- aspects of the Government policy on decommissioning and the role of NDA;
- RSR and radioactive waste management arrangements; and
- the role of ONR;

in the context of the decommissioning of nuclear facilities.

Government policies and the NDA

9. The Government policy on decommissioning is set out in "The decommissioning of the UK nuclear industry's facilities". A summary of this is set out in paragraphs 4.53 to 4.60 of the Government Environmental Permitting Guidance on Radioactive Substances Regulation. There is also a summary in Annex 1 of TAG026 of the UK policies on decommissioning and waste management more generally. Paragraph 4.54 of the EPR RSR guidance quotes the objective from the Decommissioning policy and adds that the words in bold are matters which need to be taken into consideration in RSR, namely.

"*The objective of decommissioning is to 'remove the hazard the facility poses progressively, giving due regard to security considerations, the safety of workers* ***and the general public, and protecting the environment,*** *while in the longer term reducing the number of sites and acreage of land which remain under regulatory control.* ….'

That is, within the context of RSR, we should seek to ensure that decommissioning is carried out so as to reduce the impact from the disposal of radioactive waste to a level that is as low as reasonably achievable and to protect the environment.

10. The Government policy on decommissioning requires, in general, operators to produce optimised decommissioning programmes, taking into account all relevant factors such as safety, security, protection of members of the public and the environment, etc and developed through consultation with stakeholders and regulators. For NDA sites the position is rather different, in that these sites should produce plans, consistent with the overall NDA strategy and approved by the NDA. This reflects the fact that the NDA strategy should determine the individual site strategy specifications and thus underpin the direction of decommissioning on those sites for which NDA has responsibility. We expect these plans to take into account the same factors.

11. For completeness the NDA does not need to demonstrate that its national strategy, as a whole, or the site strategy specification for individual sites, meet our requirements. However, we expect such strategies to consider regulatory requirements, amongst other things, to ensure that the strategy can be implemented within the legal framework. And operators will need to demonstrate, within their radioactive waste management arrangements, that their tactical decisions in implementing the NDA's strategic directions are compliant with RSR requirements.

12. Paragraph 4.59 of the EPR RSR guidance also states that

"Any new facility in the nuclear sector should be designed and built so as to minimise the decommissioning and associated waste management costs".

This aspect will be considered at the permitting stage for a new facility and is not covered in this guidance.

RSR and radioactive waste management arrangements (RWMAs)

13. Under RSR, we regulate the management of the generation and disposal of radioactive waste on nuclear sites, across the lifetime of the facility, without distinction between phases such as operational, decommissioning[6], and site restoration. We have set out our requirements in RSR RGN2, and these can be summarised as

- radioactive waste is managed and disposed to reduce the radiological impact to a level that is as low as reasonably achievable (ALARA) ;
- the environment is protected; and
- a range of other statutory requirements and Government policy considerations are taken into account.

14. We expect operators to undertake decommissioning to meet these requirements and the objectives in chapter 3 of this document, and to demonstrate that through their radioactive waste management arrangements, as described in chapters 5 and 6 of RSR RGN2. In making those demonstrations, we encourage operators to make use of information and documentation prepared for other purposes and that includes decommissioning arrangements. In practice these demonstrations may be made, in part or full, through decommissioning arrangements submitted to ONR or in other ways. It is a matter for operators whether their decommissioning arrangements [in the sense used by ONR] cover all aspects of radioactive waste management arrangements [in the RSR sense] or whether operators maintain them as separate documents. But in all cases, we expect operators to

- maintain radioactive waste management arrangements, however organised, that take account of and are consistent with operators' proposals for decommissioning;
- ensure and demonstrate that the key RSR objectives are met;
- review and revise RWMAs when they change their decommissioning arrangements.

15. We recognise that decommissioning is a developing and difficult challenge for most nuclear sites and we recognise the need to work closely with other regulators, operators and NDA. Our approach is

"We aim to do all that we can to facilitate prompt decommissioning in general and in particular to support prioritised hazard and risk reduction associated with the major legacy facilities. We take an overall risk informed approach to regulation, whilst ensuring that environmental standards are maintained or improved, where practicable"[7]

[6] In practice these terms may have little significance in relation to RSR in that "decommissioning" may of course involve the construction and operation of new facilities.

[7] For clarity, while the text refers to prioritised support for major legacy facilities, we take the same approach to all types of facilities, in a proportionate way

16. In practice, in addition to the principles of better regulation[8], this means we will :

- provide prompt and clear independent regulatory advice (joint with ONR whenever appropriate);
- seek early engagement and take prompt regulatory decisions to ensure we do not contribute to avoidable delays to clean-up programmes;
- streamline our regulatory processes (including close working with operators, ONR and NDA);
- challenge where appropriate and with the relevant people, whether there are better (including quicker) ways to reduce environmental risk;
- take overall risk informed regulatory decisions that consider safety/environmental risk reduction as the most urgent driver, whilst also seeking to ensure that environmental standards are maintained/improved; and
- take proportionate enforcement action, where we find non-compliance with our requirements.

ONR

17. ONR regulate decommissioning under the site licence and other provisions. ONR TAG026 describes these provisions and sets out ONR expectations for decommissioning

18. The ONR TAG states that "safety" should include environmental protection and that operators' decommissioning arrangements should seek to optimise protection across a wide range of considerations, including environmental considerations. We support the approach of an optimised approach to decommissioning and the importance of factoring environmental considerations into decommissioning strategies and plans from the outset.

19. To that end, chapter 5 of this document provides guidance on environmental considerations associated with ONR expectations in Part 2 of the TAG. However, operators will need to satisfy separately Environmental Agency requirements and, where appropriate, obtain formal approval from the Environment Agency for all matters subject to regulation under RSR or other environmental legislation. For the avoidance of doubt this includes our requirements in relation to radioactive waste management arrangements.

20. When consulted by ONR on operators' decommissioning arrangements, we will assess these and advise ONR on

a) the extent to which these adequately consider RSR and other relevant environmental matters;
b) whether the proposals, when implemented, are likely to comply with RSR and other environmental requirements; and, if necessary
c) any changes we consider necessary to these proposals.

[8] Statutory Code of Practice for Regulators, Regulators' Compliance Code, DERR, December 2007

3 Our fundamental objectives for decommissioning

21. To ensure a consistent approach, we and ONR have adopted the same two fundamental objectives for how decommissioning is carried on, namely.

- optimisation of protection;
- progressive reduction of hazard.

22. These are explained in ONR TAG026 from ONR's perspective. This chapter sets out our perspective on these objectives. Chapters 4 and 5 provide more guidance in these within the context of our regulatory responsibilities and as consultees to ONR respectively. For clarity, these objectives relate primarily to how decommissioning is carried on, not the aim of decommissioning in terms of the site end state. The issue of end states and the ending of regulatory control are considered in Chapter 5.

23. RSR principles DEDP1-5 set out our specific principles and considerations in relation to decommissioning[9]. In addition many of our other principles will also be relevant during decommissioning. Regulators should use the principles and related guidance to assess specific aspects of operators' decommissioning arrangements and compliance with the RSR permit.

Optimisation of protection

24. Optimisation of protection is IAEA Safety Fundamental no 5 (Protection must be optimised to provide the highest level of safety that can reasonably be achieved) and appears in the Euratom BSSD and in EPR in the form of the ALARA requirement, that is "*all exposures to ionising radiation of any member of the public and 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 "*[10].

25. "Optimisation" means that 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;
- nuclear security and safeguards requirements;
- issues similar to those above, but relating to non-radiological hazards;
- economic, societal and environmental factors;
- technical viability;
- uncertainties in any of the above.

[9] Note that the distinction between decommissioning strategy and plans in the Principles does not apply on NDA sites as a result of Government Policy.
[10] Schedule 23 Part 4 1(a) of the Environmental Protection [England and Wales] Regulations SI 2010 675, as amended

The timing of decommissioning is also a key factor in optimisation, in that the timing of decommissioning should be chosen so as to optimise protection overall, rather than any arbitrary aspiration, for example "as soon as reasonably practicable". This is considered further below.

26. Given the different terminology used in different legislation and the requirements for operators to meet all of them, we and ONR use the term "optimisation" to refer to the range of techniques and levels of protection that best meets all the legal requirements of ALARA, ALARP, BAT, SFAIRP, etc. The Environment Agency's guidance RSR RGN2 and "Principles of optimisation in the management and disposal of radioactive waste" provide guidance on optimisation in relation to the management of the generation and disposal of radioactive waste.

27. Operators may claim that they must undertake decommissioning within certain external constraints or requirements, such as Government plans and budgets. Such claims may relate to the timing or cost of decommissioning. However we must assess operators' proposals on the basis of the use of BAT to reduce radiological impact to members of the public to ALARA and to protect the environment over the lifetime of the facility. If we are not satisfied that the proposals are consistent with reducing impact to ALARA, then we will raise this with ONR [who regulate decommissioning] and operators and we will take this into account if we need to authorise changes to disposals [by way of variation to the permit] and in compliance assessment.

Progressive reduction of hazard

28. We expect that operators' decommissioning arrangements ensure and demonstrate a systematic and progressive reduction in hazard, with priority given to those hazards presenting the greatest risks to people and the environment. This does not mean that hazards must reduce every year, but that there is a progressive reduction over time until the end of decommissioning.

29. Decommissioning is a staged process, possibly involving intermediary periods of little or no decommissioning, such as "care and maintenance". The operator should demonstrate how the order, timing and extent of each stage reflects the hazards of the facility and how any intermediary stages are "passively safe" and consistent with subsequent stages of decommissioning. There is further guidance on this under "deferred decommissioning" in Annex D.

30. It is important to note that the greatest risks in relation to waste management and impacts may not be associated with the most significant, large or obvious hazards. In addition there may be high hazards and risks to the environmental which do not present similar immediate or significant risks to safety. This is considered further under "high risk facilities and other risks" in chapter 5.

4 RSR permit considerations

31. This chapter provides guidance on the management and the disposal of radioactive waste during decommissioning under the RSR permit. For the avoidance of doubt, these are matters subject to the RSR permit separately to any ONR requirements. In practice operators may provide the necessary information as part of documents submitted to the ONR or directly to the Agency. This guidance is supplementary to our other guidance and should be read within the wider context of that other guidance. In general we require operators to maintain radioactive waste management arrangements covering decommissioning, as set out in Chapters 5 and 6 of RSR RGN2. These arrangements should demonstrate that decommissioning will be carried out to meet the general requirements of RSR and the specific objectives for decommissioning set out in chapter 3 above, namely

- optimisation of protection;
- progressive reduction of hazard.

It is a matter for operators how they document their RWMAs and decommissioning arrangements.

32. This chapter provides additional guidance on

- radioactive waste management arrangements;
- general management system requirements;
- radioactive waste advisors (RWAs), in relation to decommissioning.

More detailed guidance on these matters in relation to periods of deferred decommissioning is given in Annex D.

33. In addition, most of the specific matters listed in chapter 5 are also relevant under RSR, in relation to the management of radioactive waste. These have been listed in chapter 5 to facilitate comparison against ONR requirements, and have not been listed in this chapter to avoid repetition. Regulators should therefore also take these into account, where relevant, when considering operators' compliance with RSR permit requirements in relation to decommissioning.

Radioactive waste management arrangements

34. We expect operators to maintain fit-for-purpose radioactive waste management arrangements for all phases of operation of a facility, including decommissioning, to comply with condition 1.1.1 of the RSR permit. We have provided general guidance in chapters 5 and 6 of RSR RGN2.

Review and revision

35. We consider changes such as entry into decommissioning or entry into and exit from deferred decommissioning (care and maintenance) to be changes with significant repercussions for the management of radioactive waste. Operators should, therefore, review and, where necessary, revise their radioactive waste management arrangements before they make such changes. Paragraphs 103-107 and Annex B of

RSR RGN2 give general guidance on the type of changes that could have significant repercussions and what is meant by significant repercussions. Annex A of this document provides some more specific guidance on change within the context of decommissioning.

36. Operators should undertake these reviews as early as reasonably practicable to support their proposals and arrangements for decommissioning and to establish and quantify the waste management implications of their proposals. Operators should characterise the physical, chemical, radiological and biological properties of the wastes from decommissioning and establish an inventory of wastes, sufficient to properly inform decisions and reports about decommissioning.

37. Operators should include in their review the following matters

- how wastes will arise, be managed and disposed of during the remaining lifecycle of the facility;
- the quantification of those waste arisings;
- their radiological impact;
- how the production, discharge and disposal of these wastes are being managed to reduce their radiological impact on people to a level that is ALARA and to protect the environment (ie demonstration of the use of BAT);
- the operator's management arrangements (in relation to the management of the generation and disposal of radioactive waste).

This review should include an assessment of the foreseeable deviations from normal operation based on a fault analysis consistent with the use of BAT. RSR RGN2 and the guidance to the application form part B3 provides more information on these in general.

38. In their review, operators should identify and consider all wastes that may require disposal during decommissioning and site restoration, including

- all current wastes, such as disused plant, infrastructure, etc;
- materials and contaminated articles that will become waste [eg contaminated plant and infrastructure still in use];

For the avoidance of doubt, plant and infrastructure includes both above and below ground structures and infrastructure, including for example drains, pipework, ponds, vaults, etc. These will become waste when no longer used in the undertaking and where contaminated above the out of scope values in the regulations will be radioactive waste. The disposal of such wastes will require to be authorised and in consequence we expect operators to include in their RWMAs their intentions and plans for the management and disposal of these wastes. This is considered in more detail in Annex E.

39. The remediation of radioactively contaminated land and groundwater may give rise to radioactive waste, and operators should consider the need for remediation and the associated potential for waste generation in their review. However, radioactively contaminated land and ground water are not radioactive material in situ and will not become waste, unless and until some action, such as remediation, generates radioactive waste. Contaminated land and groundwater should not therefore be

included in the quantification of expected wastes arisings other than any wastes expected to arise from the remediation and restoration of the site.

40. In their review operators must consider all practicable options for the management and disposal of radioactive waste from decommissioning. For LLW, paragraph 19 of the annex to the Government LLW policy lists a range of disposal options including disposal on-site or adjacent to a nuclear site and "in-situ" disposal, that is, burial at the point of arising. The latter term includes leaving already emplaced waste in situ on a permanent basis. In consequence, authorisation will be required for disposal permanently to leave already emplaced waste in situ. The requirements under RSR in relation to already emplaced wastes are fundamentally the same for any form of disposal. However, Annex E provides some additional guidance on this.

41. Operator's RWMAs should cover the prospective generation and disposal of waste so far as is reasonably practicable over the remaining lifetime of the facility. We recognise that some wastes, such as already emplaced wastes, the timing of disposal may not be straightforward. We will use the distinction between accumulation and disposal described in Annex E as the basis for determining whether waste is in accumulation or has been disposed of.

General management system requirements

42. We expect operators to maintain fit-for-purpose management arrangements for all phases of operation of a facility, including decommissioning, to comply with condition 1.1.1 of the RSR permit. We have provided general guidance on management arrangements.

43. Operators should assess and put in place the appropriate management arrangements, including the appropriate organisational structure for decommissioning, commensurate with the size, complexity and potential hazard of each phase of decommissioning, including periods of deferred decommissioning such as care and maintenance. These arrangements should also cover preparatory work for decommissioning, the transition from operation to decommissioning and other transitions in the course of decommissioning activities.

44. Operators should evaluate the knowledge, skills and technical expertise needed for safe decommissioning and should determine the minimum number and qualification requirements of staff responsible for environmental safety. The operator should ensure that it retains the necessary key staff and key skills in particular and sufficient competent persons and resources in general, as appropriate for each and every stage of decommissioning. Operators may use contractors, but we expect the operator to remain a "capable operator" in its own right and can act as an "intelligent customer". See REP MLDP3 [capability] and section 6 of the Management Arrangements guidance.

45. The operator should maintain adequate knowledge and records about facilities being decommissioned. The joint ONR/EA/SEPA guidance on the management of higher activity radioactive wastes: module 3d "managing information and records relating to radioactive waste" provides more detailed guidance.

46. Many aspects of the management arrangements will be common across operational and decommissioning phases. However, operators should review their continued

application and, as appropriate modify them, or if necessary, take additional or different measures.

47. Operators should have arrangements to manage the transition from an operational to decommissioning status and other changes, such as entry into and out of deferred decommissioning. These arrangements should include such monitoring as necessary to confirm the expected performance of the site in terms of waste management and disposals and to detect any abnormal and unexpected behaviour.

48. Annex B provides some more detailed, specific guidance on organisational arrangements during decommissioning.

Discharge limits during decommissioning

49. The DECC RSR guidance states at paragraph 4.54

When a facility ceases to be "operational", a variation to the environmental permit will normally be required; this is mainly because the discharges profile for the facility will change, and the permit should reflect this new profile, for instance by setting out new discharge limits and/or reporting requirements

50. Operators should therefore apply to vary their permits to reflect the profile of discharges, associated with "normal operation" during decommissioning. Operators should do this wherever there are significant changes in the levels or natures of disposals, for example on entry to deferred decommissioning and the re-start of active decommissioning after a period of deferred decommissioning.

51. The requirements of decommissioning may require increased limits, or limits for different radionuclides. The statutory guidance on the regulation of radioactive discharges into the environment recognises the need for flexibility in limit setting in order to achieve Government objectives, such as decommissioning. Operators may prefer to apply for campaign limits for decommissioning recognising that the levels of discharges may fluctuate and be difficult to predict during decommissioning. There may also be a need for the referral of Article 37 submissions [of the Euratom Treaty] where there are proposals for increased discharges

52. We have provided guidance on limit setting in the document "Criteria for the setting of limits on discharges of radioactive waste from nuclear sites".

53. The levels of discharges during decommissioning may be sufficiently low that they do not meet any of the criteria in the limit setting guidance. If so, there is no need to set any limits. The issue of monitoring against limits and performance/discharge monitoring is considered in Annex D.

RWAs

54. Operators must have arrangements to take advice on radioactive waste management and environmental radiation protection from suitable Radioactive Waste Advisor(s) or have suitable Corporate Radioactive Waste Advisor Arrangements and should demonstrate how that advice has been taken in consideration. We have provided guidance on the RWA scheme.

5 ONR decommissioning arrangements

55. This chapter provide**s** supplementary guidance to regulators when responding to ONR on operators' decommissioning arrangements, against ONR's expectations set out in Part 2 of TAG026.

56. ONRTAG 026 requires operators to take an integrated approach in their decommissioning arrangements covering both safety and environmental matters. In summary, when consulted by ONR on operators' decommissioning arrangements, regulators should

- use Part 2 of TAG026 and checklists 3 and 4 to identify the aspects covered by operators' decommissioning arrangements;
- assess and advise ONR on the extent to which (a) operators have taken account of environmental considerations and (b) whether the proposals will be consistent with RSR and other environmental legislation when carried out;
- seek amendments to the proposals where we consider they do not deliver satisfactory environmental outcomes.

The guidance in this chapter has been structured under the same headings as in Part 2 of ONRTAG 026 for ease of use. Many aspects are also relevant to operators' radioactive waste management arrangements under the RSR permit.

57. Regulators should not expect operators' decommissioning arrangements submitted to ONR necessarily to include all the detailed, underpinning information about the environmental aspects of decommissioning, including waste management and disposal. Instead operators' decommissioning arrangements should indicate how such environmental matters have been taken into account and that the proposals are consistent with environmental requirements, relying on other documentation for the details. That is, evidence of how this information has been used rather than the information itself.

58. Some environmental matters may require explicit approval or agreement by the Environment Agency at a later date, for example by way of applications for variations or new permits, and all matters will be subject to compliance with permit requirements, for example the conditions relating to the use of BAT, when implemented. We cannot decide such matters in advance and therefore our comments to ONR are without prejudice as to how we determine future applications and assess compliance.

59. Operators decommissioning arrangements may extend many years into the future with associated uncertainties about future programmes in relation to timing, amounts of waste requiring disposal etc. Regulators should therefore look for a proportionate level of detail in decommissioning arrangements, recognising that these are likely to be developed and refined over time.

Strategies, programmes and plans

60. ONRTAG 026 Part 2 and check lists 3 and 4 specify the expected content of decommissioning strategies, programmes and plans[11]. Annex C lists some specific RSR matters that we expect operators to take account of in developing their decommissioning arrangements, recognising that much of the detailed information in relation to RSR and other environmental issues may be held elsewhere. However this will depend on how operators have prepared their decommissioning arrangements and RWMAs.

61. We expect operators' decommissioning arrangements to be based on an examination of an adequate range of options, including their timescales [see below]. Regulators should consider whether optioneering at the facility level has taken account of environmental considerations: we have provided guidance on optioneering and the environmental factors that need to be considered in the Principles of Optimisation guidance.

End States

62. The Government has set out its expectations for end states and the process for determining these in paragraph 6 of the "The decommissioning of the UK nuclear industry's facilities". ". In general, end states on nuclear sites are not directly a matter for us [see section 5.10 of TAG026 for further information]. For NDA sites it is Government policy that the NDA strategy will specify the site end states, subject to Ministerial approval.

63. Regulators should assess whether operators' decommissioning arrangements and RWMAs

- identify and characterise all the wastes that may need to be disposed of, in order to attain the end state, where specified[12];
- include comprehensive proposals to dispose of these wastes ;
- identify and satisfy all relevant environmental legislation.[13]

Deferred decommissioning ("care and maintenance")

64. This is covered in Annex D.

[11] Regulators should note the comments in chapter 2 on Government policy and strategy and plans, in relation to NDA sites.
[12] Operators may have no current intention to de-license, for example where there is continued use of the site, and hence may not have identified any end state.
[13] For the avoidance of doubt that should cover how operators intend to address both radioactive and non-radioactive contamination and dispose of any wastes arising from remediation.

Prioritisation, uncertainties and high risks

Prioritisation

65. We and ONR expect operators to prioritise decommissioning to achieve the desired outcome of progressive reduction of hazard and risk and optimised protection. Section 8 of ONR TAG026 sets out ONR's expectations of prioritisation, taking account of uncertainties and risks. In addition we expect operators to take into consideration waste management and environmental protection issues, including their associated uncertainties and risks, when prioritising decommissioning activities.

High risk legacy facilities and other risks

66. ONRTAG 026 refers to high risk facilities, where the risks are intolerable or may soon become so. For clarity we expect operators' arrangements to consider

- the risks to members of the public and the environment, as well as on-site risks to workers;
- the risks of generating unnecessarily large amounts of radioactive waste that will require disposal, with the potential for increased radiological impact and other environmental impacts.

We therefore expect operators to consider and identify whether their facilities present high risks to waste management and protection of the environment and are a priority for attention on those grounds, while not presenting a high or indeed any immediate safety risk. Regulators should assess whether operators' decommissioning arrangements adequately address such issues. These risks could result from controlled decommissioning or from accidents. In summary we expect operators' arrangements against the matters listed in section 8.3 of ONRTAG026 to cover environmental and waste management issues, as well as the safety of workers and members of the public.

Uncertainties

67. Operators should show how they have assessed and taken account of uncertainties in decommissioning, for example in regard to:

- the ability to retrieve, characterise[14], sort, segregate, categorise, treat, store and dispose of wastes;
- the development or provision of new treatment facilities or processes required to convert decommissioning wastes into forms for suitable for long term storage or disposal;
- the availability of on-site discharge or burial options;
- the availability of off-site disposal sites.

We expect operator to demonstrate that they have appropriate contingency arrangements for the identified uncertainties.

[14] This includes the characterisation of the radiological, chemical and physical properties of waste and quantification of activity, volume or mass of the waste, as relevant.

Asset management

68. Section 9 of TAG026 sets out the ONR position on asset management in relation to decommissioning arrangements. We also require operators to have appropriate asset management arrangements over the lifetime of the facility, to ensure that facilities do not degrade to the extent that it adversely affects an operator's ability to decommission facilities in accordance with environmental requirements, in particular in relation to generation and disposal of radioactive waste. Asset management is an aspect of BAT in general and is also covered by permit condition 2.3.4, where "system and equipment" include all plant and instrumentation whose use has a bearing on the production and disposal of radioactive wastes.

Timing

69. The operator's decommissioning arrangements should clearly define the timescale for decommissioning, including all intermediate stages (eg interim states). The timing should deliver the desired outcomes of progressive reduction of hazard and optimised protection of people and the environment within the wider scope of the timing of decommissioning as a whole. That is, the timing of decommissioning should be a factor in determining the overall optimised outcome.

70. Our REPS do not provide specific advice on the factors affecting the timing of decommissioning, but the factors in ONR SAP DC3 are applicable to all aspects of decommissioning, including environmental ones, and regulators should take account of these factors use in relation to the timing of decommissioning. As stated in ONR TAG026, most of these factors drive towards the early decommissioning of nuclear facilities.

Waste management issues

71. Much of the waste management issues described in TAG026 will also be subject to regulation under RSR. Regulators should consider

- whether operators decommissioning arrangements in relation to waste management issues are consistent with our regulatory requirements; and
- whether operators' radioactive waste management arrangements cover and are consistent with the operators decommissioning arrangements.

Note that in both cases most of the aspects of waste management relating to higher activity (HA) wastes may be covered by operators' radioactive waste management cases (RWMCs).

72. As explained in paragraphs 88-90 of RSR RGN2 we expect operators to take an integrated approach to waste management covering both radioactive and directive wastes: this applies to decommissioning as well as other phases of operation. Section 10.2 of the TAG only refers explicitly to radioactive material and waste. It may be necessary to seek information about directive waste separately, through operators RWMAs.

73. Decommissioning activities, such as retrieval of raw waste, decontamination, cutting and dismantling plant for removal, demolition of buildings, etc have the potential to spread radioactivity more widely resulting in the generation of large volumes of lower

activity wastes or the creation of “secondary wastes”. Operators’ decommissioning arrangements should seek to avoid and minimise the generation of such wastes.

74. Operators must have appropriate arrangements to characterise, segregate and manage the large quantities of different types of radioactive and directive wastes that are produced during decommissioning [RSMDP9] in accordance with the UK classifications of waste. The arrangements should cover

- the segregation of waste to maximise the volume of waste that is not radioactive waste (ie clearance of out of scope waste);
- the use of exemptions for radioactive waste;
- for LLW how the operator has taken into account Government policy for the disposal of such wastes;
- for wastes for which there are not immediate disposal options, how that waste will be treated and stored in a passively safe way until disposal can take place. For HA wastes we expect operators to produce RWMCs.

Annex A: changes and review of RWMAs.

75. This annex should be read in conjunction with chapter 5 of this guidance and paragraphs 103-107 and Annex B of RSR RGN2. Checklist 2 of the ONR TAG gives examples of changes that may warrant review and modification of decommissioning arrangements. These changes may also have significant repercussions for the management of the generation and disposal of waste. Where operators make such changes to their decommissioning arrangements we would expect them to review and, where necessary, revise their RWMAs.

76. Examples of changes during decommissioning that may have significant repercussions for the management of the generation and disposal of radioactive waste include

a) changes to the facility, such as physical changes, ageing,

b) changes in inventory

c) changes to the decommissioning arrangements, e.g. those that

i. affect the impact on members of the public or the environment from the overall decommissioning programme;
ii. affect the time in which decommissioning will be completed
iii. affect the way in which decommissioning will be carried out, e.g. the use of new, untried or significantly different methods to those assessed previously;
iv. affect the way in which radioactive waste will be dealt with, e.g. different disposal options or new methods of waste treatment;

d) changes to the proposed end state;

e) unplanned deviations from the scheduled programme;

f) deviations in the assumed status of the facility, e.g. in light of new characterisation data. In particular the identification of new hazards or significant changes to the assessed consequences of hazards;

g) relevant operational feedback or changes in relevant good practice.

Annex B: organisational arrangements

77. This Annex should be read in conjunction with chapter 5 and the Guidance on Management Arrangements at nuclear sites. An operators management arrangements should include a description of how the operators will provide:

- a clearly defined, robust process for developing and managing risk-reducing projects;
- clearly defined responsibilities and lines of authority and a clear reporting hierarchy, designed to resolve any conflicts that could compromise protection of people and environment during decommissioning;
- clear interfaces and communication routes especially when contractors or outside organisations are used;
- arrangements such that no decommissioning activity is undertaken without a prior assessment of its impact on protection of people and the environment. Such arrangements should give due consideration to different decommissioning activities executed in parallel which might adversely affect the safety of each other;
- processes to deliver decommissioning achieving the goals and requirements in this guidance. Processes should ensure work that may affect protection of people and the environment is performed under controlled conditions, by using approved current procedures, instructions, drawings or other appropriate means that are periodically reviewed to ensure their adequacy and effectiveness;
- arrangements for issuing, modifying and terminating work procedures;
- management of change provisions, in particular to reflect the significant organisational and personnel changes that usually occur when a facility transitions from an operational phase into a decommissioning phase, or between different phases of decommissioning;
- arrangements to ensure that the organisational arrangements are reassessed on a regular basis and in particular, if there is a major change in the plant state or hazard or relevant operating experience.

Annex C: content of strategies, programmes and plans

78. This annex should be read in conjunction with chapter 5. It is emphasised that the issues below are in addition those listed in Part 2 and checklists 3 and 4 of the ONR, or relate to specific environmental aspects of these issues.

79. In a general sense the operators should describe how their decommissioning arrangements will manage the production, discharge and disposal of radioactive waste to protect the environment and to optimise protection of people during decommissioning. This should include

a) a defined inventory of the plants and liabilities, e.g. radiological inventory, (or a predicted inventory for those plants not at the end of their operational life), defining the wastes that will require disposal;

b) (a) should also include

i. a site baseline survey, including the radiological conditions, to enable comparison with the proposed end-state after decommissioning. Baseline surveys should consider both surface and subsurface conditions as well as groundwater. For existing sites without such survey data then data from analogous, undisturbed areas with similar characteristics should be used;
ii. characterisation of the non radiological properties of the wastes;
iii. relevant operational history.

c) how the operator will manage the production, discharge and disposal of radioactive waste to protect the environment and to optimise the protection of people during decommissioning. This should also address the progressive reduction of hazards and risks. As appropriate this should also address the non-radiological properties of the waste

d) qualitative estimates of

- discharges of gaseous and aqueous wastes;
- arisings of combustible waste and disposals by on-site and off-site incineration
- arisings of other radioactive waste (by category and disposal route, if any)

over the course of decommissioning, in total and annually;

e) the suitability for disposal of wastes for which there is no current disposal route (HA wastes) and how these will be managed in the interim so as not to prejudice their ultimate disposal;

f) monitoring proposals for both discharge monitoring and environmental monitoring;

g) assessment of the future radiological impact of the discharges from decommissioning on people and the environment. The purpose of which would be to support request to change the limits in the permit;

h) the need for permits or variations to existing permits, including changes to limits and the need for the referral of article 37 submissions.

Annex D: deferred decommissioning

80. This Annex covers deferred decommissioning, that is where a site is placed in a care and maintenance state for an extended period before final decommissioning and site restoration take place. It provides additional guidance to that in Chapter 4 on what we expect the operator to do and to demonstrate to comply with the RSR permit before entry to and during deferred decommissioning.

81. We consider changes such as entry into and exit from deferred decommissioning are likely to be changes with significant repercussions for the management of radioactive waste. Operators should therefore review and, where necessary, revise their radioactive waste management arrangements before they make such changes, and be able to demonstrate that

- deferred decommissioning is consistent with our objectives; and
- deferment will not adversely affect the future management and disposal of waste when decommissioning recommences.

82. As preparation for entry into deferred decommissioning we expect that, as far as reasonably practicable,

a) all LLW[15] [including any liquids such as pond water] and all Directive waste[16] should be removed from site;
b) HAW radioactive waste remaining on site should be covered by RWMCs ;
c) all radioactive waste remaining on site should be immobilised and/or passively stored [see REPS RSMDP10 and 11] as far as reasonably practicable;
d) discharge pathways to the environment [eg drains, ventilation routes] should be removed or sealed, where there is no current or future use. Pathways used during deferred decommission or being retained for later use should be minimised in line with the agreed passively safe state;
e) the need is minimised for active environmental protection, monitoring systems or human intervention in relation to waste management and disposals, while maintaining adequate surveillance monitoring of the site during the period of deferment;
f) the potential ageing, deterioration and obsolescence of the facility has been considered both in relation to ensuring the environmental safety of the facility during deferred decommissioning and for the duration of the remaining decommissioning activities.

.

83. For the avoidance of doubt, point (a) refers to waste in a form suitable for disposal [ie packaged waste] or which can readily be disposed of after some preparatory work, eg redundant pipework. We recognise that some LLW, for example contaminated structures or infrastructure may remain on site pending later disposal, in accordance with the decommissioning programme for the site.

[15] Any LLW that cannot be disposed of, because there is no disposal route, should be regarded as HAW [under the joint guidance] and covered by a RWMC

[16] NB under our guidance on RWMAs we require operators to take an integrated approach to waste management and this statement is made within that context. If operators are proposing to store directive waste on site, then consideration may be required whether this complies with directive waste legislation.

84. In addition, operators should undertake a comprehensive assessment of potential releases to the environment and/or the formation of secondary wastes using a source, pathway, receptor model for what constitutes “normal operation “ during the period of deferred decommissioning. “Normal operation” is defined more fully in the guidance on limit setting. It does **not** include accidents [defined by ONR as an event having an impact > 10 uSv/yr]. This assessment should include all potential sources of radioactivity, whether radioactive waste, contaminated infrastructure or contaminated land/ground water, that can give rise to disposals or the generation of secondary waste.

85. Operators should put in a place a programme of monitoring sufficient to detect deviations from expected performance, based on the systematic assessment of potential releases and the potential for secondary waste generation. This may include process monitoring, discharge monitoring and environmental monitoring as appropriate The response time of such monitoring must ensure prompt detection and reporting of abnormal events or discharges proportionate to their scale and rapidity of development.

86. Operators should have arrangements in place to respond to alarms or other indications of abnormal events. If the site is unmanned, then we would expect remote monitoring with alarms to an external manned location (eg the “Hub”). Alarms should be prioritised against their significance with appropriate response times identified. Operators should make arrangements to ensure attendance by suitably qualified personnel within the alarm response time identified. This may require the use of contractors or locally based staff if the site is remote from the Hub.

87. Operators should have a programme to manage the transition to deferred decommissioning. This should include monitoring to confirm the predicted behaviour of the facility in relation to the management of radioactive waste and disposals. Operators may be able to reduce the nature and frequency of monitoring based on experience of the transition into deferred decommissioning.

88. Operators should put in place adequate management arrangement for deferred decommissioning including the following aspects

- waste and asset management;
- knowledge management;
- research , for example in relation to future decommissioning options;
- stakeholder engagement during deferred decommissioning;
- where relevant, monitoring of contaminated land and groundwater.

Permit compliance during deferred decommissioning

89. It is expected that the standard range of nuclear permit conditions will apply during deferred maintenance with the potential exception of discharge limits. Operators will therefore need to demonstrate compliance throughout deferred maintenance, proportionately to the nature of the site.

90. As noted in Chapter 4, the level of discharges during care and maintenance may be sufficiently low that we would not set limits based on our limit setting guidance. However, where discharge limits remain in place during deferred decommissioning, operators will need to demonstrate compliance. It is expected that operators will need to continue to make PI returns and some similar annual return in relation to discharges under the permit, regardless of whether limits are set. So in all cases, it is likely that

operators will need to make some annual assessment and statement of discharges. Operators should use the most appropriate method of demonstrating compliance with discharge limits or meeting other reporting requirements. Technical Guidance Note 1 (TGN1) identifies options for reporting discharges. The three main options are measurement, calculation and use of standard reporting values. The most appropriate approach used should be justified – taking into account changes in site status, transitional arrangements, any changes in site discharges expected as a result (nuclides and quantities) and the time frames over which the selected approach is likely to be valid. The site should include - where appropriate - monitoring to detect abnormal conditions that could lead to abnormal discharges. Where the results of monitoring for abnormal releases are included as part of compliance reporting, appropriate approaches from TGN1 should be selected and applied.

91. Government policy requires operators to undertake retrospective dose assessment and to undertake environmental monitoring to inform this assessment [paragraph 4.13 of the DECC RSR guidance]. This is implemented by permit condition 3.2.1(b). While the impact from new discharges is expected to be very small during care and maintenance, there may be a significant impact from historical releases, and the impact may change as a result of changes in habits. For these reasons, these requirements will continue during deferred decommissioning. Radiological Monitoring TGN2 provides guidance on environmental monitoring.

92. While condition 3.2.1(b) requires operators to “define, document and carry out an environmental monitoring programme” that does not preclude operators sharing environmental programmes or for one operator, for example on a multi-operator site, to undertake the monitoring for other operators, or for operators to use data obtained by other organisations, such as the FSA, providing that the data collected is adequate for the purposes of a retrospective dose assessment.

93. The operator may keep his management system [policies, procedures, record etc] off-site, although this will need to be agreed via the CEAR to condition 4.1.2. But the operator will need to demonstrate how these are made available/used by personnel on site, whether staff or contractors.

Annex E: buried structures and on-site disposal of radioactive waste

Introduction

94. This Annex provides additional guidance on our approach to the in situ disposal of radioactive waste associated with buried structures and infrastructure. Parts of it also relate to other types of on-site burial of waste, for example infilling or landscaping.

When is (infra) structure waste?

95. Structures and infrastructure are anything that has been used for the purpose of the undertaking. That may include for example, drains, pipes, buildings, ponds, vaults etc whether above or below ground. Under RSR legislation these are regarded as waste when they meet any of the definitions of waste in the regulations[17], and radioactive waste to the extent that they [or parts of them] are above the out of scope values. In practice this means that disused contaminated structures and infrastructure are likely to be radioactive waste, in part or full.

96. Buried structures are likely to be contaminated in parts that have previously been exposed to radioactive substances, such as the insides of pipes or other vessels used to hold radioactive substances. Alternatively there may be contamination of the outside of infrastructure arising from radioactivity migrating through land and groundwater from previous leaks or spills. Such contamination may be limited to the surface of impermeable structures or may have migrated into porous structures. The extent of migration may vary depending on the radionuclides present and their chemical form. As such the degree and nature of contamination may be very variable over buried structures as a whole. In addition, much of these structures may be difficult to access, making in situ assessment of the extent and levels of contamination difficult or impossible to assess.

97. In such situations we expect operators to adopt an approach that takes into account the possibility that the structure comprises parts that may be below the out of scope values for radioactive substances and parts that are above these values, and to consider how best to achieve overall effective waste management for the structure and its constituent parts, within an integrated approach to waste management [both radioactive and directive waste] for the site as a whole.

98. In general, it is not acceptable to average the estimated activity over the total mass of the structure and then to argue that the waste structure, as a whole, is out of scope or exempt. And in any event, this is unlikely to be accurate having regard to the difficulty of assessing the inventory of radionuclides in buried structures. The industry NICOP on "Clearance and Radiological Sentencing" provides guidance on this subject. It is consistent with the approach set out in this Annex; it does **not** support the concept of averaging over a structure to determine whether it is radioactive waste, exempt or out of scope.

[17] The definitions of waste and radioactive waste are as set out in schedule 23 Part 2 3 and 4 of the 2010 regulations as amended

RWMAs

99. Operators should ensure that their RWMAs address the disposal of waste from buried contaminated structures and infrastructure and set out how they intend to dispose of them, essentially in the same way as any radioactive waste, radioactive material or contaminated article that will become waste, as described in chapters 5 and 6 of RSR RGN2.

100. Operators should do this while these structures are in use, if possible, so that there is an early solution for waste management in accordance with the Government LLW policy. Failing that, operators should declare their intentions once structures become waste.

101. For sites in deferred decommissioning, it will be necessary to distinguish between buried [and more widely, other] structures that no longer have any use ie are likely to be waste, and those which will be **used** [not decommissioned] during deferred decommissioning or in the later stages of decommissioning, as these are not wastes. For example, some drains may continue to be used for site drainage purposes during deferred decommissioning.

What should operators demonstrate in relation to buried structures?

102. In general, RSR applies to the management of the generation and disposal of these wastes in exactly the same way as other forms of radioactive waste, such as process wastes, contaminated plant and equipment, and contaminated above surface buildings and other infrastructure. As such, operators should ensure that

- such wastes are managed and disposed of in accordance with the requirements of RSR, including relevant Government policy;
- their radioactive waste management arrangements cover these wastes, and set out how operators intend to dispose of buried structures.

103. To ensure effective management of buried structures, we expect operators to

1) establish the levels of contamination of buried structures based on their provenance and measurements as far as reasonably practicable;
2) identify and assess all reasonably practicable options for the treatment and disposal of the structures;
3) implement the option that represents an optimised disposal option for the waste from the structure, using BAT, subject to regulatory approval from the Environment Agencies and ONR, as appropriate.

104. These points are considered in outline below. There is more detailed guidance under our REPs and other guidance. The NICOP on the "Clearance and Radiological Sentencing" also provides much useful background in relation to the characterisation, sorting and segregating, and sentencing of contaminated articles and structures. Section 5.4.4 "potentially contaminated porous solids" is likely to be the most relevant section for buried concrete structures. However, other sections may also be relevant, depending on the nature of the contamination and the infrastructure

105. Operators should use the provenance of the structure, with additional measurements where available, to estimate the likely degree of contamination of the structure, that is, its extent, the radionuclides present and their activity. Other information, such as the chemical and physical nature of the radioactive waste, non-radioactive contaminants, the leachability of radioactivity and conventional pollutants may also be required. In accordance with the NICOP, operators should treat as radioactive waste, subject to the RSR permit, any contaminated wastes that they cannot demonstrate as being out of scope or exempt.

106. This information should help the operator to identify the preferred treatment and disposal option for each structure. The operator should consider all reasonably practicable options. We would expect operators to demolish these buried structures, using BAT to characterise, sort and segregate radioactive and directive wastes to facilitate their re-use or recovery, so that waste can be disposed of in accordance with the waste management hierarchy. This could include on-site use of rubble for landscaping purposes or on-site re-use in other building works, as well as similar off-site uses.

107. However, we recognise that in situ disposal by burial, ie by leaving the structure in place, potentially with some associated works such as backfilling voids, grouting pipework and surface landscaping, may be an optimised disposal option. If seeking to do this, an operator will need authorisation to dispose of the structure in situ, based on its radionuclide inventory and taking account of any conventional pollutants in accordance with the relevant principles in the near surface GRA. This is covered in more detail below.

108. In all cases we expect operators to undertake the above assessment and to implement the optimised solution, subject to any necessary regulatory approval, and to document this in their RWMAs.

Authorisation for in-situ disposal

109. If operators wish to dispose of waste in situ, they will need to apply for a variation to their permit. The standard permit template does not routinely allow for that form of disposal. Operators should apply as soon as they determine that this is their preferred option.

110. To gain approval, an operator will need to demonstrate that

- burial is an optimised route for disposal of that radioactive waste form [having regard to the options available], and
- burial will meet the relevant requirements of the near surface GRA.

111. This is principally R5, R6 and R7. Operators should also be aware that the surrender[18] provisions set out in paragraph 5.5.7 of the near surface GRA will apply when they seek to surrender a permit covering on site burial. [19]

[18] The GRA predates EPR – so refers to revocation rather than surrender.
[19] For clarity, this applies only to the part of the site on which burial took place.

112. We will encourage operators to discuss any proposal for in situ disposal with ONR, so that operators understand the implications in relation to their ability to de-license and end the period of responsibility under NIA65[20]. We will consult ONR on all applications for on-site burial.

Storage or disposal ?

113. We recognise that where the proposal is to leave already buried waste in situ or to undertake landscaping or infilling, there may be a question of whether the waste has been disposed of or is in accumulation pending later disposal. Government Guidance [21] makes the following distinctions:

"storage" is seen as emplacement in a facility, either engineered or natural, with the intention of taking further action at a later time, and in such a way and location that such action is expected to be feasible.

"disposal" is seen as dispersal of radioactive waste into an environmental medium or emplacement in a facility, either engineered or natural, with the intention of taking no further action apart from any monitoring which may be thought desirable on either technical grounds or to provide reassurance.

In this context we regard "feasible" to include legal considerations in general and RSR legislation in particular. That is, to be feasible, proposals should meet the requirements of RSR legislation and the objectives of Government policy, as well as being implementable in practical terms.

114. We will use these distinctions[22] to determine on a case by case basis, in conjunction with ONR, whether operators' proposals and actions constitute accumulation or disposal.

"Decay storage"

115. We recognise that it may be beneficial in terms of waste management to take advantage of radioactive decay. Where this is proposed, we expect operators to describe their long term intentions for the waste in the normal way.

116. In particular, if the intention is to allow waste to decay to below out of scope values, operators must set out how they proposed to deal with the resulting directive waste in accordance with the relevant directive waste legislation.

[20] It is accepted that operators may not intend to de-license the site.
[21] These definitions are contained in the Guide to the Administration of the RSA60 and the Notes and Clauses to the Act. In addition the definition of disposal in RSA 60 is the same as that in EPR 2010. The legislation contains a definition of accumulation or storage.
[22] See pages 420- 422 of Troman's Nuclear Law [ISBN 978-1-84113-857-2] for further discussion of these issues.