



ONR GUIDE			
<b>LC33: Disposal of radioactive waste</b>			
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## 1 INTRODUCTION

- 1.1 Many of the licence conditions attached to the standard nuclear site licence require, or imply, that licensees should make arrangements to comply with regulatory obligations under the conditions. ONR inspects compliance with licence conditions, and also with the arrangements made under them, to judge the suitability of the arrangements made and the adequacy of their implementation. Most of the standard licence conditions are goal-setting, and do not prescribe in detail what the licensees' arrangements should contain; this is the responsibility of the duty-holder who remains responsible for safety. To support inspectors undertaking compliance inspection, ONR produces a suite of guides to assist inspectors to make regulatory judgements and decisions in relation to the adequacy of compliance, and the safety of activities on the site. This inspection guide is one of the suite of documents provided by ONR for this purpose.

## 2 PURPOSE AND SCOPE

- 2.1 This Technical Inspection Guide (TIG) has three main purposes:
- To assist ONR Inspectors in carrying out their duties related to Licence Condition 33 (LC33);
  - To facilitate a consistent approach to the regulation of LC33, benchmarked against applicable IAEA Standards;
  - To identify further sources of guidance relevant to LC33.
- 2.2 This TIG has five main elements:
- Wording of LC33;
  - Purpose of LC33;
  - Guidance on ONR's expectations with respect to LC33;
  - Guidance on carrying out inspections and/or issuing Directions relating to LC33;
  - Sources of additional background guidance on the management of radioactive waste to assist Inspectors' awareness, including guidance on relevant interfaces with the environment agencies.
- 2.3 Inspectors should apply this guidance in a targeted and proportionate manner.
- 2.4 On matters affecting the management of radioactive waste on nuclear licensed sites, ONR takes account of the interests of the relevant environmental regulator – either the Environment Agency (EA) in England, the Scottish Environment Protection Agency (SEPA) in Scotland, or Natural Resources Wales (collectively referred to as the “environment agencies” in the remainder of this TIG).
- 2.5 Inspectors should familiarise themselves with ONR's Memoranda of Understanding with the EA <sup>[ref 7.2]</sup>, SEPA <sup>[ref 7.4]</sup> and Natural Resources Wales <sup>[ref 7.3]</sup>, as well as the joint guidance document, “Basic Principles of Radioactive Waste Management” <sup>[ref 7.1]</sup>.
- 2.6 The environmental legislation i.e. the Radioactive Substances Act 1993 (RSA93) in Scotland, or the Environmental Permitting Regulations 2010 (EPR2010) in England and Wales – requires a nuclear licensee to obtain a permit or authorisation from the relevant environment agency whenever it intends to:
- Discharge radioactive gases to the environment;
  - Discharge radioactive liquids to the environment;
  - Transfer radioactive waste to another site, for the purpose of waste processing or waste storage, or;

- Consign radioactive waste to a final disposal facility (e.g. an incinerator or solid waste repository), from which there is no intention to retrieve the waste.
- 2.7 As the four activities outlined in paragraph 2.6 all require a “disposal permit/authorisation” to satisfy the requirements of RSA93 and/or EPR2010, these four activities are collectively referred to as “disposal” in the context of the environmental legislation. NIA65 does not include an explicit definition of “disposal”. ONR has recognised the need to provide Inspectors with clarity on whether “disposal” in the context of LC33 can include the transfer of radioactive waste to from one licensed site to another, for the purpose of processing or storage. Inspectors should seek further guidance from ONR’s Professional Lead for the Management of Radioactive Waste if they believe it may be fitting for ONR to issue a Direction under LC33 to this effect.
- 2.8 LC33 concerns the disposal of radioactive waste by a licensee, in order to comply with a Direction from ONR. The requirements of LC33 apply to all the following categories of radioactive waste:
- High Level Waste (HLW) – waste that is sufficiently radioactive for its decay heat to significantly increase its temperature and the temperature of its surroundings, such that heat generation has to be taken into account in the design of storage and disposal facilities.
  - Intermediate Level Waste (ILW) – waste whose radioactivity exceeds the limits for Low Level Waste (see below), but whose decay heat is insufficient for heat removal to be a factor in the design of storage or disposal facilities.
  - Low Level Waste (LLW) – waste whose radioactive content does not exceed 4GBq/Tonne of  $\alpha$  or 12 GBq/Tonne of  $\beta$ - $\gamma$  activity.
  - Very Low Level Waste (VLLW) – waste whose radioactive content does not exceed 4MBq/Tonne, the activity limit for tritium being 10 times higher.

The disposal of small volumes of some types of VLLW can be exempted from some requirements of environmental legislation if the preconditions specified in that legislation can be satisfied.

- 2.9 Higher Activity Waste (HAW) comprises a number of categories of radioactive waste: High Level Waste (HLW), Intermediate Level Waste (ILW); and some Low Level Waste (LLW) that has no available disposal route at present.
- 2.10 Inspectors of sites that produce or store HAW should familiarise themselves with the joint guidance <sup>[ref 7.1]</sup> including the concept of Radioactive Waste Management Cases (RWMCs).
- 2.11 The primary purpose of a RWMC is the demonstration of adequate management of the HAW covered, including:
- Compliance with regulatory requirements;
  - Provision of an acceptable outcome in terms of national policy;
  - Consistency with national and international standards;
  - How interdependencies are taken account of among all steps in generation and management of the HAW, and;
  - The complete story of the management of the HAW that cannot necessarily be seen from examination of individual plant safety cases.
- 2.12 The Joint Guidance aims to ensure HAW is managed in a sustainable way by facilitating:
- Confidence in the eventual disposability of conditioned HAW;
  - A transparent and systematic approach to the selection of options that incorporates both safety and environmental protection considerations, and;

- A protocol that enables ONR to seek advice from the environment agencies when assessing licensees' proposals and thereby minimise the possibility of a licensee facing conflicting requirements.
- 2.13 This TIG contains key information from the Joint Guidance that is relevant to LC33, without repeating that guidance in its entirety.
- 2.14 Large quantities of HAW are currently stored on nuclear licensed sites because a national disposal route for HAW does not presently exist. LC33 could be used by ONR (in consultation with the relevant environment agency) to ensure disposal of such HAW takes place, once a suitable final disposal route is established.
- 2.15 Inspectors should be aware that government policies for the long-term future management of HAW differ in Scotland (long-term, near-surface, near-site storage) and England/Wales (deep geological disposal). ONR presently considers waste packages conditioned in anticipation of deep geological disposal in England and Wales are also suitable for long-term, near-surface, near-site storage as required by government policy in Scotland. ONR is keeping the relevant government policies and packaging advice of the Nuclear Decommissioning Authority's (NDA) Radioactive Waste Management Ltd (RWM) under review and will provide further guidance should
- 2.16 On licensed nuclear sites in the UK, "radioactive waste" has the meaning assigned thereto in paragraph 3 of Part 2 of Schedule 23 to the Environmental Permitting (England and Wales) Regulations 2010:
 

"In this Schedule, "radioactive waste" means waste which consists wholly or partly of—

  - a) a substance or article which, if it were not waste, would be radioactive material;
  - (b) a substance or article which has been contaminated in the course of the production, keeping or use of radioactive material, or by contact with or proximity to other waste falling within sub-paragraph (a) or this sub-paragraph."
- 2.17 In summary, radioactive waste is any material that is either radioactive itself or is contaminated by radioactivity, for which no further use is envisaged by its owner. Government policy means that certain radioactive materials such as uranium, plutonium and spent nuclear fuel have not been declared to be waste by their owners. The organisation that owns the radioactive material and radioactive waste that are accumulated upon a nuclear licensed site may or may not be the licensee for the site concerned (e.g. the owner may be the NDA, Ministry of Defence, or another third party).
- 2.18 The licensee's arrangements should identify the holder of financial liability for the costs of treatment and disposal of radioactive materials and radioactive wastes from the licensed site. If two separate organisations are involved, interactions between the licensee and the owner of radioactive materials and radioactive wastes should include an efficient mechanism by which radioactive material can be declared to be a radioactive waste in a timely manner as soon as no further productive use for it is foreseen.
- 2.19 The requirements of LC33 and ONR vires therein apply not only to solid radioactive waste, but also to liquid and gaseous radioactive waste whilst they are found on nuclear licensed sites.

### **3 LICENCE CONDITION 33: DISPOSAL OF RADIOACTIVE WASTE**

- 3.1 On nuclear licensed sites in England and Wales, LC33 is worded as follows:

33(1) The licensee shall, if so **directed** by ONR, ensure that radioactive waste accumulated or stored on the site is disposed of as ONR may **specify** and in accordance with an environmental permit, or an existing permit which has become an environmental permit, granted under the Environmental Permitting (England and Wales) Regulations 2010 (as amended).

3.2 On nuclear licensed sites in Scotland, LC33 is worded as follows:

33(1) The licensee shall, if so **directed** by ONR, ensure that radioactive waste accumulated or stored on the site is disposed of as ONR may **specify** and in accordance with an Authorisation granted under the Radioactive Substances Act 1960 or, as the case may be, the Radioactive Substances Act 1993.

3.3 The two versions of LC33 quoted above reflect that different environmental legislation applies between the UK's devolved administrations - this is explained in further detail in Section 9.

3.4 As nuclear licensees require a permit or authorisation from the relevant environment agency for the disposal or transfer off-site of radioactive waste, if a licensee needs to take action to comply with a Direction from ONR under LC33 it will also need to satisfy the requirements of the relevant environment agency. The wording of LC33 reflects this balance of regulatory responsibilities.

#### 4 PURPOSE OF LICENCE CONDITION 33

4.1 LC33 provides ONR with a power to Direct a licensee to dispose of radioactive waste from a nuclear licensed site. The delegated power to sign a Direction rests with the applicable Deputy Chief Nuclear Inspector (DCI), In accordance with ONR guidance NS-PER-GD-013.

4.2 Circumstances in which Inspectors may consider recommending ONR issue a Direction under LC33 for a licensee to dispose of radioactive waste may include, but are not limited to:

- If ONR believes a licensee is accumulating a significant quantity of radioactive waste on a licensed site for which a feasible disposal route is readily available, in contravention of ONR's expectations for LC32;
- If ONR believes a licensee is not competent to safely manage an accumulation of radioactive waste that is being stored on its licensed site, such that the workforce, environment and/or the public are being exposed to an unacceptable level of risk;
- If ONR believes a licensee is managing radioactive waste in a manner that is not demonstrably within the safe operating envelope justified in the applicable plant safety case;
- If radioactive waste has been created as the result of an adverse event (such as a major release of radioactivity) in a manner that presents an unacceptable risk to the workforce, environment and/or public, or;
- If ONR believes for any other reason the radioactive waste will not otherwise be competently managed in accordance with the applicable regulatory expectations.

4.3 If any of the criteria outlined in paragraph 4.2 apply, ONR would need to assess the feasibility of a Direction under LC33 securing an effective remedy. Relevant factors in making this assessment may include, but are not limited to:

- Whether issue of a Direction would be compatible with ONR's Enforcement Management Model (EMM) and ONR's Enforcement Policy (including a consideration of alternative enforcement options);

- Whether a feasible disposal route, supportable by the relevant environment agency, is available for the radioactive waste in question (including a consideration of whether the radioactive waste will be adequately managed at the site(s) that will receive the waste);
  - Whether disposal of the radioactive waste in question would be compatible with all applicable government policies, and;
  - Whether the licensee has the required competence and specialist resources to achieve disposal of the radioactive waste in question, in an adequately safe manner.
- 4.4 If having considered the factors outlined in paragraphs 4.2 and 4.3 above ONR decided that issue of a Direction under LC33 was a fitting course of action, the Direction should contain as a minimum:
- A comprehensive description of the radioactive waste requiring disposal, in terms of the quantity, waste category, waste type and its location on site;
  - A timescale within which ONR believes it is reasonable for the licensee to dispose of the radioactive waste;
  - Applicable legislation with which the licensee must comply whilst carrying out the disposal, and;
  - Any other particular requirements that ONR believes the licensee needs to comply with, in order that the radioactive waste in question will be disposed of in an adequately safe and secure manner.
- 4.5 So far as reasonably practicable, a Direction issued under LC33 should only include requirements that are Specific, Measurable, Achievable, Realistic and Timely (SMART).
- 4.6 So far as is reasonably practicable (SFAIRP), ONR should avoid becoming the “controlling mind” with respect to the details of how a disposal that is Directed under LC33 should be carried out; if possible the optioneering of the technical approach should be left to the licensee.
- 4.7 In the event that ONR has issued a Direction under LC33, Inspectors may choose to undertake targeted follow-up interventions to gain assurance that all the stated requirements will be properly complied with in a timely manner. Wherever practicable, such interventions should be carried out jointly with the relevant environment agency Site Inspector. Relevant factors for this type of intervention may include, but are not limited to:
- Whether the licensee has identified all the technical and logistical enablers that are required in order for compliance with the Direction to be secured;
  - Once the licensee has informed ONR that the Directed disposal has taken place, an Inspector may wish to check that all the intended radioactive waste has left the licensed site and that the method of disposal was adequately safe;
  - A check of supporting records, and;
  - A check of whether the licensee is a learning organisation and has taken effective action to improve its arrangements in a sustainable manner, such that the failures that gave rise to the need for ONR to issue a Direction under LC33 will not be repeated.
- 4.8 Circumstances on GB nuclear licensed sites to date have been such that ONR (nor its predecessor, the Nuclear Installations Inspectorate) has not needed to issue a Direction under LC33.

## 5 GUIDANCE ON ARRANGEMENTS FOR LC33

- 5.1 Whilst the wording of LC33 does not include any specific requirement for licensees to make adequate arrangements to comply with the condition, ONR would expect a licensee to recognise the powers available to ONR under LC33 and have in place a management system that will allow the licensee to respond should ONR see fit to issue a Direction under LC33.
- 5.2 The list below identifies some evidence that ONR might expect a licensee to provide, in order to demonstrate that the licensee would be able to respond adequately in the event ONR were to issue a Direction under LC33. The list is neither exclusive nor exhaustive.
- The licensee **should recognise that LC33 gives ONR the legal power to issue a Direction** that radioactive waste on the licensed site shall be disposed of by the licensee in a specified manner.
  - The licensee should have a **management system by which the licensee will secure compliance** with any Direction issued by ONR under LC33. The system should ensure any Direction issued by ONR under LC33 will be delivered to a Suitably Qualified and Experienced Person (SQEP), holding a sufficiently senior position in the licensee's organisation to ensure compliance will be delivered.
  - The licensee's management system should ensure its response to a Direction will **secure disposal of the radioactive waste in question whilst complying with the requirements of the relevant environment agency and all regulatory requirements applicable to off-site transport and the site that will receive the waste**. The licensee should have in place a due process that will ensure an application will be made to the relevant environment agency for any changes to its permit or authorisation that might be necessary to comply with a Direction – in some circumstances (explained in Section 9) this may include a requirement for the licensee to provide information to inform an Article 37 Submission.

## 6 GUIDANCE ON INSPECTION OF ARRANGEMENTS AND THEIR IMPLEMENTATION

- 6.1 Inspectors should consider the scope and depth of any inspection associated with LC33 and necessary joint working with the relevant environment agency Site Inspector (and the Defence Nuclear Safety Regulator (DNSR) on sites that contribute to the MoD's nuclear programme).
- 6.2 NIA65 places a requirement on ONR to consult the appropriate environment agencies on issues which affect the creation, accumulation or disposal of radioactive waste before issuing, amending or varying nuclear site licences, or attaching conditions to them. In addition to these statutory consultation requirements, ONR has entered with the EA, NRW and SEPA to ensure coordinated regulation on nuclear licensed sites. Inspectors are reminded that an assessment or review that considers a licensee's management of radioactive waste should include consultation with the applicable environmental regulator as appropriate under the applicable MoU. Inspectors should meet the standards of co-operation expected in the MoUs when undertaking any intervention on a nuclear licensed site that has a focus on management of radioactive waste.
- 6.3 Before considering issuing a direction under LC33, Inspectors should:
- Seek advice from an ONR Radioactive Waste Management Specialist Inspector and Professional Lead;

- Consult the relevant environment agency in accordance with the appropriate MoU,
  - Consult ONR Enforcement Management Model and Enforcement Policy, and;
  - Discuss and agree that a Direction is appropriate regulatory action with the relevant ONR Superintending Inspector prior to seeking support of the relevant Deputy Chief Inspector (DCI), noting the DCI has the delegated authority to sign a Direction.
- 6.4 Inspectors should consult the ONR Communications Team prior to issuing any Direction under LC33, due to the strong likelihood of significant stakeholder interest.
- 6.5 Inspectors should seek evidence to confirm any actions needing to be taken by the licensee to comply with a Direction under LC33 would take place in accordance with a suitable permit or authorisation for disposal from the relevant environment agency. If the Directed disposal cannot be achieved within the constraints of the extant permit or authorisation, the licensee should apply to the relevant environment agency for any amendments necessary.
- 6.6 Inspectors should seek evidence to confirm any actions the licensee needs to take to comply with a Direction under LC33 will be carried out in accordance with an appropriate safety case made to satisfy the requirements of LC14, plus any applicable transport regulations, security regulations and International Safeguards requirements.
- 6.7 In recent years significant volumes of solid radioactive waste have been routinely sentenced from GB nuclear licensed sites to facilities overseas for processes such as smelting of LLW metal. It would not normally be appropriate for ONR to issue a Direction for disposal of radioactive waste to take place overseas. The Transfrontier Shipment of Radioactive Waste and Spent Nuclear Fuel Regulations 2008 (SI 2008/3087) set out the circumstances under which radioactive waste and spent nuclear fuel may be imported and exported and are enforced by the relevant environment agency – these regulations complement the environment agencies' powers and duties under EPR2010 and RSA93.
- 6.8 Inspectors should be aware that if an LC33 Direction from ONR requires an alteration to the way a licensee disposes of radioactive waste, it may result in a need for a submission from the UK Government to the European Commission, known as an Article 37 submission. The submission would need to include enough data to determine whether the planned actions are liable to result in the radioactive contamination of the water, soil or airspace of another member state. The Commission should provide its opinion within six months. Until the Commission gives its opinion, the relevant environment agency cannot grant permission to allow the new disposal plan to take place. In recognising these requirements nuclear licensees should allow sufficient resources to provide all the required data to the UK Government and sufficient time for completion of the due process, in their plans to respond to any Direction issued by ONR under LC33.

## 7 FURTHER READING

- 7.1 Basic Principles of Radioactive Waste Management; An Introduction to the Management of Higher Activity Radioactive Waste on Nuclear Licensed Sites; Joint Guidance from the Office for Nuclear Regulation, the Environment Agency, the Scottish Environmental Protection Agency and Natural Resources Wales to nuclear licensees; February 2015; <http://www.onr.org.uk/wastemanage/basic-principles.pdf>
- 7.2 Memorandum of Understanding between the Office for Nuclear Regulation and the Environment Agency on Matters of Mutual Interest in England;  
<http://www.onr.org.uk/documents/2015/mou-onr-ea-180815.pdf>



- 7.3 Memorandum of Understanding between the Office for Nuclear Regulation and Natural Resources Wales on Matters of Mutual Interest in Wales;  
<http://www.onr.org.uk/documents/2015/nrw-mou.pdf>
- 7.4 Memorandum of understanding between the Office for Nuclear regulation and the Scottish Environment Protection Agency on Matters of Mutual Interest in Scotland;
- 7.5 Health and Safety Executive; Guidance on the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations;  
<http://www.hse.gov.uk/nuclear/eiadrguidance.pdf>
- 7.6 Health and Safety at Work etc. Act 1974 (c37); The Stationary Office; 1974; ISBN 978 0 10 543774 1  
<http://www.legislation.gov.uk/ukpga/1974/37/contents>
- 7.7 Nuclear Installations Act 1965 (c57); The Stationery Office; 1965; ISBN 978 0 10 850216 3  
<http://www.legislation.gov.uk/ukpga/1965/57/contents>
- 7.8 Nuclear Site Licence Conditions; ONR;  
[www.onr.org.uk/nuclear/silicon.pdf](http://www.onr.org.uk/nuclear/silicon.pdf)
- 7.9 Radioactive Substances Act 1993 (c12) The Stationery Office 1993 ISBN 978 0 10 541293 9  
<http://www.legislation.gov.uk/ukpga/1993/12/contents>
- 7.10 Environmental Permitting Regulations (England and Wales) 2010. (Amendment No.3 2015) The Stationery Office SI 2010 No 675 ISBN 978 0 11 113965 3  
<http://www.legislation.gov.uk/ukdsi/2010/9780111491423/contents>
- 7.11 Ionising Radiations Regulations Statutory Instrument 1999/3232; The Stationary Office; ISBN 978 0 11 085614 8;  
<http://www.legislation.gov.uk/uksi/1999/3232/regulation/18/made>
- 7.12 IAEA Safety Standard; Predisposal Management of Radioactive Waste; General Safety Requirements Part 5; No GSR Part 5; May 2009; STI/PUB/1368 ISBN 978 92 0 111508 9  
[http://www-pub.iaea.org/MTCD/publications/PDF/pub1368\\_web.pdf](http://www-pub.iaea.org/MTCD/publications/PDF/pub1368_web.pdf)
- 7.13 IAEA Safety Standard; The Management System for the Processing, Handling and Storage of Radioactive Waste; Safety Guide GS-G-3.3; July 2008; ISBN 978 92 0 102008 6  
[http://www-pub.iaea.org/MTCD/publications/PDF/pub1329\\_web.pdf](http://www-pub.iaea.org/MTCD/publications/PDF/pub1329_web.pdf)
- 7.14 Reducing Risks Protecting People, HSE's Decision Making Process; 2001; ISBN 0 7176 2151 0;  
<http://www.hse.gov.uk/risk/theory/r2p2.pdf>
- 7.15 The Management of Higher Activity Radioactive Waste on Nuclear Licensed Sites; Joint Guidance from the Office for Nuclear Regulation, the Environment Agency, the Scottish Environment Protection Agency and Natural Resources Wales to nuclear licensees; February 2015;  
<http://www.onr.org.uk/wastemanage/waste-management-joint-guidance.pdf>

- 7.16 Review of Radioactive Waste Management Policy – Final Conclusions. Command 2919, HM Government 1995.
- 7.17 The Decommissioning of the UK Nuclear Industry's Facilities; URN 04/1598; BERR September 2004.
- 7.18 Implementing Geological Disposal: A Framework for the Long Term Management of Higher Activity Radioactive Waste; A White Paper by DECC; July 2014.  
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- 7.19 Scotland's Higher Activity Radioactive Waste Policy. The Scottish Government  
[www.scotland.gov.uk/Publications/2011/01/20114928/0](http://www.scotland.gov.uk/Publications/2011/01/20114928/0)
- 7.20 Safety Assessment Principles for Nuclear Facilities (2014 Edition, Revision 0) ONR 2014.  
<http://www.onr.org.uk/saps/saps2014.pdf>
- 7.21 Regulatory Guidance Series, No RSR 1, Radioactive Substances Regulation: Environmental Principles, Version 2, Environment Agency April 2010.  
<http://publications.environment-agency.gov.uk/pdf/GEHO0709QSB-e-e.pdf>
- 7.22 Council Directive 2013/15/EURATOM of 5 December 2013 Laying Down Basic Safety Standards for Protection Against the Dangers Arising from Exposure to Ionising Radiation. Official Journal L-13, 17.01.2014, p. 1.
- 7.23 Radioactive Substances (Basic Safety Standards) (England and Wales) Direction 2000. DETR 2000
- 7.24 Radioactive Substances (Basic Safety Standards) (Scotland) Direction 2000. Scottish Executive 2000
- 7.25 Ionising Radiations Regulations Statutory Instrument, 1999/3232. The Stationary Office ISBN 978 0 11 085614 8
- 7.26 Principles of optimisation in the management and disposal of radioactive waste, Version 2, Environment Agency April 2010.  
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- 7.27 Satisfying the ALARA requirement and the role of Best Practicable Means. Issue 1.1 Scottish Environmental Protection Agency 2012.  
[http://www.sepa.org.uk/media/101545/satisfying\\_the\\_alara\\_requirement\\_and\\_the\\_role\\_of\\_best\\_practicable\\_mean.pdf](http://www.sepa.org.uk/media/101545/satisfying_the_alara_requirement_and_the_role_of_best_practicable_mean.pdf)
- 7.28 Guidance for the Environment Agencies' Assessment of Best Practicable Environmental Option Studies at Nuclear Sites. Environment Agency and Scottish Environmental Protection Agency 2004.  
[http://www.sepa.org.uk/media/101558/guidance\\_for\\_the\\_environment\\_agencies\\_-\\_assessment\\_of\\_best\\_practicable\\_environmental\\_option\\_studies\\_at\\_nuclear\\_sites.pdf](http://www.sepa.org.uk/media/101558/guidance_for_the_environment_agencies_-_assessment_of_best_practicable_environmental_option_studies_at_nuclear_sites.pdf)
- 7.29 The Hazardous Waste (England and Wales) Regulations (Amended 2009) The Stationery Office 2005 ISBN 0 11 072685 5.  
<http://www.legislation.gov.uk/ukxi/2005/894/contents/made>

- 7.30 Special Waste Regulations 1996 SI 1996/972 The Stationery Office 1996 ISBN 978 0 11 0629414 as amended by Special Waste (Amendment) Regulations 1996 SI 1996/2019 ISBN 978 0 11 0628943
- 7.31 Near-surface Disposal Facilities on Land for Solid Radioactive Waste: Guidance on Requirements for Authorisation. The Environment Agency, the Scottish Environment Protection Agency, and the Northern Ireland Environment Agency; February, 2009.  
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- 7.32 Geological Disposal Facilities on Land for Solid Radioactive Waste: Guidance on Requirements for Authorisation. The Environment Agency and the Northern Ireland Environment Agency; February, 2009.  
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- 7.33 Multi-criteria analysis: a manual for making government policy. Department of Communities and Local Government; January, 2009.  
<http://www.communities.gov.uk/publications/corporate/multicriteriaanalysismanual>
- 7.34 What is a Hazardous Waste? A guide to the Hazardous Waste Regulations and the List of Waste Regulations in England and Wales. The Environment Agency; May 2007.  
<http://adlib.eversite.co.uk/resources/000/245/086/GEHO0506BKTR-e-e.pdf>

## 8 DEFINITIONS

- 8.1 Definitions for all the terms commonly used in the management of radioactive wastes can be found in the joint Office of Nuclear Regulation, Environment Agency, Scottish Environment Protection Agency and Natural Resources Wales document “Basic principles of radioactive waste management”

<http://www.onr.org.uk/wastemanage/basic-principles.pdf>

## 9 APPENDIX: INTERFACES WITH THE ENVIRONMENT AGENCIES RELEVANT TO THE REGULATION OF LC33

- 9.1 Management of radioactive waste on nuclear licensed sites requires close liaison between ONR and the environment agencies, due to common interests and the need to regulate in a coordinated manner that avoids imposition of conflicting requirements on licensees. The legislative means by which the management of radioactive materials is regulated by the environment agencies differs between the UK’s various devolved administrations; however the effects of the legislation are consistent.
- 9.2 Prior to 2010, the Radioactive Substances Act 1993 (RSA93) applied across the whole UK. RSA93 concerns the control and security of radioactive materials, including radioactive waste to ensure that accumulation and disposals occur with minimum radiological impacts on members of the public and the environment.
- 9.3 RSA93 was incorporated into Schedule 23 of the Environmental Permitting Regulations 2010 (EPR2010) in England and Wales in April 2010, where the enforcing authorities are the EA (in England) and NRW (in Wales). RSA93 remains in force in Scotland, where the enforcing authority is SEPA.
- 9.4 RSA93 uses the terms “authorisation” (for the accumulation and disposal of radioactive waste) and “registration” (for the keeping and use of radioactive substances). In EPR2010 these terms were replaced by permitting.
- 9.5 RSA93 uses the terms “Best Practicable Means (BPM)” and “Best Practicable Environmental Options (BPEO)”. In EPR2010 these terms were replaced by “Best Available Techniques (BAT)” which is taken to be broadly equivalent to BPM and BPEO.
- 9.6 The Department of the Environment, Food and Rural Affairs (DEFRA) has produced specific guidance on Environmental Permitting for Radioactive Substances Regulation, which explains the role of ONR and NIA65 for licensed nuclear sites.
- 9.7 Nuclear licensees are exempt from the RSA93 and EPR2010 requirement to obtain a permit or authorisation from the relevant environmental regulator to accumulate radioactive waste and/or keep and use radioactive material (RSA Section 8(1), EPR Schedule 23). Nuclear licensees require a permit or authorisation from the relevant environmental regulator for the disposal or transfer off-site of radioactive waste and for the keeping or use of mobile radioactive sources. The environment agencies have no statutory powers over the storage of radioactive waste on nuclear licensed sites, until the licensee seeks permission to dispose of the waste or transfer it elsewhere.
- 9.8 Radioactive waste can be exempted from specific regulatory control if its activity does not exceed thresholds of quantity and concentration laid down in the current regulations. In England and Wales the levels are described in Environmental Permitting Regulations (England and Wales) Amendment 2011. In Scotland, the requirements are set within the Radioactive Substances Exemption (Scotland) Order 2011. The non-radiological characteristics of the waste (e.g. chemical content) may still invoke the need to comply with other legislation (e.g. COSHH Regulations).

- 9.9 On sites that are not licensed under NIA65, the powers granted to the environment agencies under RSA93 and/or EPR2010 extend to the storage of radioactive waste as well as disposals, whilst ONR is the Ionising Radiations Regulations 1999 (IRR99).
- 9.10 When a licensee proposes to condition HAW into a form suitable for long term storage or disposal, ONR seeks advice from the appropriate environment agency on the long-term disposability of the proposed product, in accordance with the protocol in HOW2. This advice should inform ONR's expectations for the safety-related aspects of processing, interim storage and transport of the packaged waste, and address the environment agencies' regulatory expectations with respect to protection of the public and the environment over the longer-term.
- 9.11 The decommissioning of nuclear reactors is subject to the requirements of the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (EIADR), the enforcing authority for which is ONR. ONR employs a specialist team to deliver its responsibilities in relation to EIADR. The environment agencies are statutory consultees for the process of ONR granting consent prior to the commencement of a reactor decommissioning project. Inspectors on sites undertaking or planning a reactor decommissioning project should liaise with their EIADR-specialist colleagues and familiarise themselves with the requirements of EIADR, on which specific guidance is available <sup>[ref 7.5]</sup>.
- 9.12 The Transfrontier Shipment of Radioactive Waste and Spent Nuclear Fuel Regulations 2008 (SI 2008/3087) set out the circumstances under which radioactive waste and spent nuclear fuel may be imported and exported from the UK. These regulations complement the environment agencies' powers and duties under EPR2010 and the RSA93. The relevant environment agency should consult with ONR prior to granting consent for a Transfrontier Shipment from a UK nuclear licensed site.
- 9.13 Part 3, paragraph 2(4) of EPR2010 provides a reserve power to the EA to ensure the disposal of radioactive waste is disposed of in the event of certain circumstances occurring, which may include:
- If radioactive waste is discovered on a premises that is unoccupied;
  - If the occupant(s) of a premises where radioactive material is found are absent or insolvent,
- Or;
- If the EA believes for any other reason the radioactive waste will not otherwise be lawfully disposed of in accordance with the requirements of the regulations.
- 9.14 RSA93 provides a similar power to SEPA in Scotland as the power available to EA as described in paragraph 9.15.
- 9.15 The normal means of ensuring properly controlled disposal of radioactive waste from sites is through EPR2010/RSA93 permit/authorisation conditions. On non-nuclear sites the environment agencies have the powers to regulate the accumulation of radioactive waste, including the amounts accumulated and the associated timescales, through permit/authorisation conditions. However the powers of the environment agencies do not apply to the accumulation of radioactive waste on any premises situated on a nuclear site. Section 68(1)(c) of the Energy Act 2013 and section 4 of the Nuclear Installations Act 1965 provide ONR with the power to regulate the storage and use of nuclear matter on GB nuclear sites (which includes the accumulation of radioactive waste). ONR regulates the safety aspect of the handling, treatment and disposal of nuclear matter, and the discharge of any substance on or from the site, through LCs 32 to 34 together with other relevant LCs such as LC4. ONR works

closely with the environment agencies under memorandums of understanding to ensure that nuclear safety and environmental regulation is delivered efficiently.