



ONR GUIDE			
LC5 CONSIGNMENT OF NUCLEAR MATTER			
Document Type:	Nuclear Safety Technical Inspection Guide		
Unique Document ID and Revision No:	NS-INSP-GD-005 Revision 3		
Date Issued:	February 2019	Review Date:	February 2022
Approved by:	K McDonald	Professional Lead Operational Inspection	
Record Reference:	TRIM Folder 1.1.3.979. 2019/22675		
Revision commentary:	<p>Updated:</p> <ol style="list-style-type: none"> 1. All definitions taken out of the body of the TIG and put into an Annex to aid document clarity and to remove unnecessary duplication within the TIG. 2. Changes due to 'Environmental Permitting Regulations 2016' and 'Environmental Authorisations (Scotland) Regulations 2018' 3. Changes made due to 'The Nuclear Installations (Excepted Matter) Regulations 2017' 4. Clarity added in 'consent' requirements for LC 5(1) 		

TABLE OF CONTENTS

1	INTRODUCTION	2
2	PURPOSE AND SCOPE	2
3	LICENCE CONDITION 5: CONSIGNMENT OF NUCLEAR MATTER.....	2
4	PURPOSE OF LICENCE CONDITION 5	3
5	GUIDANCE ON PROCEDURES FOR LC5.....	5
6	GUIDANCE ON INSPECTION OF PROCEDURES FOR LC 5	6
7	GUIDANCE ON INSPECTION OF IMPLEMENTATION OF PROCEDURES FOR LC 5	7
8	FURTHER READING	7
9	DEFINITIONS	8

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 inspections, ONR produces a suite of guides to assist inspectors in making 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 guidance has been prepared as an aid to inspection activities carried out by ONR Nuclear Safety Inspectors at Nuclear Installations in judging the licensees' compliance with the requirements of Licence Condition 5 (LC 5). This guidance provides a framework for these inspection activities within which the Inspector is expected to exercise his/her discretion. This framework is provided to facilitate a consistent approach to LC 5 compliance inspection at all nuclear licensed sites.

2.2 The guidance is for use by all Nuclear Inspectors in ONR. The guidance does not indicate when or to what extent LC 5 inspections should be carried out as these matters are covered in individual Inspector's inspection plans.

2.3 The guidance provided is split into four main elements:

- Purpose of the Licence Condition
- Guidance on procedures for LC 5
- Guidance on inspection of procedures for LC 5
- Guidance on inspection of implementation of procedures for LC 5

3 LICENCE CONDITION 5: CONSIGNMENT OF NUCLEAR MATTER

3.1 5(1) The licensee shall not consign nuclear matter (other than excepted matter and radioactive waste) to any place in the United Kingdom other than a relevant site except with the **consent** of ONR

3.2 5(2) The licensee shall keep a record of all nuclear matter (including excepted matter and radioactive waste) consigned from the site and such record shall contain particulars of the amount, type and form of such nuclear matter, the manner in which it was packed, the name and address of the person to whom it was consigned and the date when it left the site.

3.3 5(3) The licensee shall ensure that the aforesaid record is preserved for 30 years from the date of dispatch or such other period as ONR may **approve** except in the case of any consignment or part thereof subsequently stolen, lost, jettisoned or abandoned, in which case the record shall be preserved for a period of 50 years from the date of such theft, loss, jettisoning or abandoning.

4 PURPOSE OF LICENCE CONDITION 5

- 4.1** LC 5 is a condition attached to all Nuclear Site Licences. Nuclear site licensees are required to comply with the licence condition. How this compliance is achieved is for the licensees to decide. However, ONR must judge the adequacy of this compliance. It carries out this function by compliance inspection.
- 4.2** The purpose of this licence condition is to require that the licensee follows certain requirements with regard to consigning nuclear matter from the licensed nuclear site. Firstly, to ensure that the transfer of nuclear matter, other than excepted matter and radioactive waste, to sites in the UK other than relevant sites is carried out only with the consent of ONR. Secondly, that records are kept of all nuclear matter, including excepted matter and radioactive waste, consigned from the site. The records should be kept for a minimum of 30 years to comply with condition 5(3) except for the case of theft, loss, etc. in which case retention for 50 years is required. An important aspect of this LC is a good understanding of the terms "nuclear matter", "relevant site", "excepted matter", and "radioactive waste". The Annex to this TIG and Section 8 ('Further Reading') discuss these terms and paragraphs 4.3 to 4.9 consider significant aspects with regard to the implementation of the licence condition.
- 4.3** LC5 (1) allows "excepted matter" and "radioactive waste" to be consigned to any place in the United Kingdom without the consent of ONR. In the case of excepted matter, for instance, this allows many isotopes to be consigned to hospitals without the consent of ONR. In the case of radioactive waste, the majority of radioactive waste is consigned off a relevant site for waste processing and/or disposal. Waste processing facilities which handle low levels of radioactivity (e.g. incinerators) or disposal facilities may not meet the prescribed activities defined in NIA 65 and the 1971 Nuclear Regulations which would require a Nuclear Site Licence; therefore it is possible that waste is not consigned to a relevant site as described in the Annex to this TIG. In this case there is alternative legislation in place, which requires prior authorisation from the relevant environment agency, in the form of an environmental permit or authorisation for the transfer of radioactive waste. Without these exceptions in LC 5(1) for excepted matter and radioactive waste all consignments would require consent from ONR if they were consigned to a non-relevant site. The updates to the Environmental Permitting Regulations (EPR 2016) for England and Wales and Environmental Authorisations (Scotland) Regulations 2018 include a revised definition for radioactive waste. This revised definition excludes some waste, as being "out of scope" of the radioactive substances legislation, on the basis that the radiological exposure from this material is too small to warrant the regulatory control normally required for radioactive waste. Wastes which are "out of scope" are not defined as "radioactive waste" in EPR 2016 and the new Environmental Authorisations (Scotland) Regulations 2018. These regulations also make provision for some radioactive wastes, which contain very low levels of activity, to be free from permitting under the environmental legislation. However, "out of scope" material still meets the definition of "nuclear matter" as defined within NIA 65. Therefore to comply with LC 5(1) a consent from ONR, prior to consignment to any place in the United Kingdom other than a relevant site, would be required.
- 4.4** The exclusion of "excepted matter" and "radioactive waste" in LC 5(1) removes an onerous task for what are low hazard materials with limited radiological consequence. These changes in the environmental legislation result in a requirement on ONR to provide consent for the consignment of the lowest of these during consignment to a non-relevant site. This anomaly will be articulated within the next iteration of the ONR Licence Conditions. However, during this interim period ONR will not issue a consent under LC 5(1) for waste which meets the definition of "out of scope" in Part 6 of Schedule 23 of EPR 2016 and Part 1, Schedule 8 of the Environmental Authorisations (Scotland) 2018 on the grounds that this is considered disproportionate.

- 4.5** The Nuclear Installations Regulations 1971 would require ONR to grant a consent under LC 5(1) as outlined below:-
- These regulations prescribe activities which cannot be undertaken unless a nuclear site licence is in place; the activities include nuclear fuel element manufacture, the processing of enriched uranium or plutonium, the storage of fuel elements, irradiated nuclear fuel, and bulk quantities of any radioactive matter, etc. However, assay or metallographic investigation of enriched uranium or plutonium compounds was excluded from the list of prescribed activities. Such compounds are not excepted matter and probably not classified as radioactive waste. Hence, if a licensee wishes to send such material to a university for assay then a consent under LC 5(1) will be required from ONR since nuclear matter is being sent to a place which is not a relevant site.
- 4.6** This shows that with the exception of those transfers which are explicitly stated to be outside the scope of LC 5, (“excepted matter”, “radioactive waste” and transfers to “relevant sites”), the requirements of LC 5 apply to all transfers of nuclear matter from a licensed site, to places other than a relevant site, irrespective of whether some or all of that matter will subsequently be returned to that site. Furthermore that:
- The meaning of “consign” should be taken to be the ordinary common sense meaning of the term, i.e. to deliver or transmit goods for sale or custody.
 - LC 5 consents are not granted for Crown owned nuclear matter, including, but not limited to, nuclear submarine fuel where the refuelling activities are undertaken on licensed sites. In these instances the Defence Nuclear Safety Regulator (DNSR) is the regulating body.
- 4.7** LC 5 does not formally require the licensee to make and implement adequate arrangements. However suitable written procedures should be produced to enable compliance with this condition to be visible. These procedures should ensure that a consent is sought from ONR before nuclear matter is sent to non-relevant sites in the UK as required by condition 5(1).
- 4.8** Requests for consent under 5(1) should be supported by sufficient justification for consignment. Inspectors should:
- Check that the site receiving the nuclear matter does not require licensing and whether a permit under section 2 of NIA 65 is required.
 - Contact the relevant ONR Operational Inspector (Transport SQEP), to obtain advice on the safe transport of the nuclear matter and to provide opportunity to ensure that the appropriate regulations for road, sea, rail or air transport of radioactive material are complied with. The relevant ONR Operational Inspector should also be contacted with a view to ensuring that the movement has the necessary approvals under NISR 2003.
 - Contact the HSE inspector responsible for inspecting the place to which the nuclear matter is being sent to provide opportunity to confirm that any required radioactive notifications and assessments are made.
 - Contact the appropriate Environment Agency, Scottish Environment Protection Agency or Natural Resources Wales inspector to confirm appropriate permits and authorisations are in place under EPR 2016 or Environmental Authorisations (Scotland) 2018 as appropriate.

5 GUIDANCE ON PROCEDURES FOR LC5

- 5.1** The licensee should have procedures in place to demonstrate compliance with LC 5; the following list considers aspects of the requirements. The list is neither exclusive nor exhaustive and will be subject to review and revision in light of operational experience. If licensees have generic model(s) for arrangements then it is for the site to justify any deviation from the model(s).
- 5.2** Procedures should be provided to comply with LC 5.
- 5.3** Procedures shall address the licence condition requirements. The person responsible for compliance should be identified.
- 5.4** Procedures should be readily available and should be up to date, signed by an appropriate senior manager and controlled under a system compliant with the requirements of LC 17 – Management systems. Modifications to such procedures should be conducted in line with the licensee’s LC 22 (‘Modifications or Experiment on Existing Plant’) arrangements.
- 5.5** The licensee should include in the procedure the following definitions;
- Relevant Site;
 - Nuclear Matter;
 - Excepted Matter;
 - Radioactive Waste; and
 - Radioactive Material.
- 5.6** Furthermore, the procedures should provide a clear interpretation of the meaning of the above definitions.
- 5.7** The procedures should ensure that nuclear matter, other than excepted matter and radioactive waste, is only consigned to a relevant site and prevent the consigning of nuclear matter to any other site except with the consent of ONR. Person(s) responsible for complying with this requirement should be identified.
- 5.8** Procedures should ensure that when nuclear matter, including excepted matter and radioactive waste is consigned from site, records are made of the amount, type and form of such nuclear matter, details of packaging, the name and address of the consignee and the date it left the licensee's site.
- 5.9** The procedures should ensure that records made under LC 5(2) align with the arrangements for compliance with LC 25 (‘Operational Records’) and should be kept for a period of 30 years from the date of consignment unless:
- The consignment, or part thereof, has been lost, stolen, jettisoned or abandoned, in which case a period of 50 years applies or,
 - A different record retention period is approved by ONR.
- 5.10** The procedures should identify the person(s) responsible for seeking the consent of ONR if nuclear matter is to be consigned to any location other than a relevant site.

- 5.11** The procedures should identify the person(s) responsible for complying with any approval of record retention period made by ONR, and should identify the system whereby constraints, caveats or conditions imposed by ONR are implemented.

6 GUIDANCE ON INSPECTION OF PROCEDURES FOR LC 5

- 6.1** Part 6 of this guidance is to assist inspectors in judging the adequacy of the licensee's procedures. The following list is neither exclusive nor exhaustive and will be subject to review and revision in light of operational experience. It does, however, provide a list of aspects of LC 5 that can be examined during routine inspections.
- 6.2** Check that procedures have been made to demonstrate compliance with the LC.
- 6.3** Examine the procedures documentation layout and check that it is consistent. Review the procedures to establish validity, whether any changes have been made since the last review and whether the identified responsible persons are correct. Note whether instructions, methods and quality assurance requirements claimed in procedures have been followed and whether any changes that have been made have been correctly incorporated and validated.
- 6.4** The inspector should check that any review/updating of the licensee's procedures has included consideration of relevant Learning from Experience (LFE).
- 6.5** Check that the procedures contain suitable and sufficient definitions with respect to:
- A relevant site;
 - Nuclear matter;
 - Excepted matter;
 - Radioactive material; and,
 - Radioactive waste.
- 6.6** Note – Nuclear Site Licences issued in England, Scotland and Wales refer to the permitting regulations in force at the time of their issue. The definitions should cross-refer to the relevant legislation and the procedures should provide a clear interpretation on the meaning of the definitions.
- 6.7** Examine procedures concerning consignment and check that they identify that nuclear matter, other than excepted matter and radioactive waste, can only be consigned to a relevant site. Otherwise the procedures should identify that a consent is required from ONR prior to consignment.
- 6.8** Examine procedures concerning consignment and check that the procedures adequately detail the requirement to keep a record of all nuclear matter (including excepted matter and radioactive waste) consigned from the site. The record should contain particulars of the amount, type and form of such nuclear matter, the manner in which it was packed, the name and address of the person to whom it was consigned and the date when it left the site.
- 6.9** Inspectors should ascertain the roles, responsibilities, authorities and accountabilities of relevant licensee staff with respect to the consignment of nuclear matter.
- 6.10** Check how the licensee ensures that its processes for; receipt, dispatch and transport of consigned materials are safe secure and is undertaken by Suitably Qualified and Experienced Persons (SQEP).

- 6.11** Check that the licensee conducts checks, prior to consignment, that the consignor at the receiving site has confirmed that it can receive the consignment and that it has suitable and sufficient SQEP staff to receive it.
- 6.12** Examine the licensee's arrangements for protecting its records and for ensuring their long term durability (see LC 6 and LC 25 also).
- 6.13** Examine procedures concerning record keeping and check that procedures adequately detail the requirements to preserve records as stated in LC 5 (3).

7 GUIDANCE ON INSPECTION OF IMPLEMENTATION OF PROCEDURES FOR LC 5

- 7.1** Part 7 of this guidance is to assist inspectors in judging the adequacy of the licensee's implementation of its procedures i.e. is the licensee complying with the procedures. The following list is neither exclusive nor exhaustive and will be subject to review and revision in light of operational experience. It does, however, provide a list of aspects of LC 5 that can be examined during routine inspections.
- 7.2** Check whether any consignments have been made that involve the requirements of LC 5(1). If so, check against LC 5(1) with respect to an application for a consent; check that there are legitimate reasons for the transfer of nuclear matter and that the site receiving the nuclear matter does not need to be licensed under the Nuclear Installations Act. Check whether or not a permit is required under section 2 of NIA 65 and, if so required that it has been granted.
- 7.3** Examine a number of nuclear matter consignment records to ascertain whether they involve this LC. If so, check for compliance with this licence condition.
- 7.4** Check a sample of records held in the site's documentation or record centre and establish that they satisfy LC 5(3) in respect of storage records. Confirm that they contain suitable signatures and are dated as required.
- 7.5** With respect to any consignment of nuclear matter or any part thereof which has been lost, stolen, jettisoned or abandoned, check the records to ensure that this is recorded appropriately. Such records should be allocated a storage period of 50 years from the date of any such occurrence.
- 7.6** Discuss with the responsible person identified in the compliance procedures the requirements of this licence condition and confirm that suitable control is being exercised. Identify whether there are any constraints, caveats or conditions imposed by the licensee or ONR and confirm that they are being duly complied with and that records show this to be the case.
- 7.7** The licensee should identify any Learning from Experience (LfE) and review its procedures accordingly.
- 7.8** Roles and responsibilities for the consignment of all nuclear matter should be clearly defined. For Crown owned nuclear matter, procedures should clearly articulate the interface between both licensee and authorisee. The licensee should be able to demonstrate adequate training and/or refresher training for infrequent operations, in line with LC 10 ('Training').

8 FURTHER READING

- 8.1** . Department of Business, Energy and Industry Strategy, Guidance Document, "Scope and Exemptions from the Radioactive Substances Legislation in England, Wales and Northern Ireland", August 2018.

ANNEX – DEFINITIONS

Nuclear Installations Act

Throughout the definitions below the Nuclear Installations Act 1965 (as amended) is referred to as NIA 65.

Nuclear Matter

The term “nuclear matter” for the purposes of LC 5 under NIA 65 includes “fissile material”, “radioactive material”, “excepted matter” and “radioactive waste”.

LC 1: Interpretation states that “nuclear matter” has the meaning assigned thereto in NIA 65; Section 26 of NIA 65 states: “nuclear matter” means, subject to any exceptions which may be prescribed:

- (a) any fissile material in the form of uranium metal, alloy or chemical compound (including natural uranium), or of plutonium metal, alloy or chemical compound, and any other fissile material which may be prescribed; and
- (b) Any “radioactive material” produced in, or made radioactive by exposure to the radiation incidental to, the process of producing or utilising any such fissile material as aforesaid.

It is ONR’s view that the definition of “nuclear matter” includes Depleted Uranium (DU).

Further information on the meaning of “nuclear matter” and “radioactive material” is provided in Section 8 ‘Further Reading’.

Note – The interpretation of whether a substance or article is “nuclear matter” and “radioactive material” for the purposes of NIA 65 can be complex and where necessary Inspectors should seek advice from an Inspector within the ONR Nuclear Liabilities specialism.

Radioactive Material

The bounds of “radioactive material”, within the NIA 65 Section 26 (b) “nuclear matter” definition, is broader than the definition of “radioactive material” provided by the Environmental Permitting (England and Wales) Regulations 2016, as referenced in LC 1. The Environmental Permitting (England and Wales) Regulations 2016 Section 9 (Contaminated substances or articles) excludes from the definition of “radioactive material” any substance or article which has been contaminated “while the substance or article is kept on the premises on which the contamination occurred”. The NIA65 definition is wider and can be looked upon as meaning any material on the nuclear licenced site that has been made radioactive intentionally, or otherwise. This exception is captured within LC1 “radioactive material” definition.

The interpretation of whether a substance or article is “radioactive material” for the purposes of NIA 65 and LC 5 can be complex and therefore, where necessary, inspectors should seek advice from an Inspector from the Nuclear Liabilities specialism.

Excepted Matter

8.2 “Excepted matter” is a sub-category of “nuclear matter”. When “excepted matter” is present on a licensed site it should be treated in regard to regulatory control in the same manner as all other forms of “nuclear matter”. It is only when the “nuclear matter” has left the site that the term “excepted matter” takes on its special meaning as defined in Section 26(1) of NIA 65 and Nuclear Installations Regulations 2017.

8.3 LC 1: Interpretation states that "excepted matter" has the meaning assigned thereto in NIA 65 and the Nuclear Installations (Excepted Matter) Regulations 2017. Section 26(1) of NIA 65 states that “excepted matter” means nuclear matter consisting only of one or more of the following, that is to say:

- (a) Isotopes prepared for use for industrial, commercial, agricultural, medical scientific or educational purposes;
- (b) Natural uranium;
- (c) Any uranium of which isotope 235 forms not more than 0.72 per cent;
- (d) Nuclear matter of such other description, if any, in such circumstances as may be prescribed.

The isotopes referred to in Item (a) are in a form where they have completed the production process, are fully fabricated and ready for use. Item (c) includes depleted and low enriched uranic material. Item (d) has been used to implement “The Nuclear Installations (Excepted Matter) Regulations 2017. To satisfy the definitions of “excepted matter” stated in these regulations, nuclear matter must meet the requirements of either Section 3(2) or Section 3(3).

Section 3(2) of the Nuclear Installations (Excepted Matter) Regulations 2017 defines nuclear matter as “excepted matter” when the substance consists substantially of uranium in which:

- The total activity content per gram of that substance of all radioisotopes, other than any uranium isotopes which are normally present in natural uranium or any daughter products of such uranium isotopes.
- Does not exceed 3.3 kilobecquerels for all alpha emitting isotopes.
- Does not exceed 0.74 megabecquerels for all beta or gamma emitting isotopes.

And

- The mass of any isotope of uranium-235 does not exceed 1% of the total mass of all the uranium isotopes present.

Section 3(3) of the Nuclear Installations (Excepted Matter) Regulations 2017 identifies that “excepted matter” is nuclear matter (excluding waste discharged or consigned from a relevant site) that has been consigned from a relevant site and at the time when it left that site:-

- Is packed and labelled in accordance with the IAEA 2012 edition of the Regulations for the Safe Transport of Radioactive Material and
- Meets the fissile limits described in paragraph 417(a) to 417(f) in the IAEA 2012 regulations

- Meets the prescribed limits described in Section 4 'Prescribed activity limits' of the Nuclear Installations (Excepted Matter) Regulations 2017

In broad terms, "excepted matter" is nuclear matter which, because of its nature, its preparation, or the small quantity, cannot give rise to the exceptional hazards for which NIA 65 provides. Hence, it falls outside of the liability regime established by NIA 65.

Radioactive Waste

- 8.4** "Radioactive Waste" for the purposes of LC 5 is identical to the interpretation found under LC 1. It is substances and articles that satisfy the definition of waste and the criteria for being "in scope" of the radioactive substances legislation (see below). Waste includes scrap materials, unwanted surplus substances, substances or articles that require to be disposed of, or substances or articles that are to be discharged, discarded or dealt with as if they were waste. Waste is only "radioactive waste" if it is also "in scope" of the regulations. The criteria for determining whether a waste is in scope include radionuclide specific activity concentrations and a number of other exclusion criteria.
- 8.5** The interpretation of whether a substance or article is "radioactive waste" for the purposes of LC 1 and LC 5 can be complex and therefore where necessary inspectors should seek advice from the ONR Nuclear Liabilities specialism.
- 8.6** LC 1: Interpretation states that "radioactive waste" has the meaning assigned thereto in:
- In England and Wales - Paragraph 3 of part 2 of Schedule 23 to the Environmental Permitting (England and Wales) Regulations 2016 (EPR 2016),
 - In Scotland - Section 1A of the Radioactive Substances Act 1993. [It is noted that the Environmental Authorisations (Scotland) Regulations 2018 came into force on 1st September 2018 to replace the Radioactive Substances Act 1993. As the ONR Licence Condition Review to incorporate this change has not concluded (as of November 2018), then the text presented here purposely aligns with the current ONR Licence Condition Handbook].

Further detail on the meaning of "radioactive waste" is provided in Section 8 'Further Reading'.

Relevant Site

- 8.7** LC 1: Interpretation states that "relevant site" has the meaning assigned thereto in NIA 65. Section 26 (1) of NIA 65 states: "a "relevant site" means any of the following, that is to say -
- (a) A licensed site at any time during the period of the licensee's responsibility;
 - (b) Any premises at any time when they are occupied by the Authority;
 - (c) Any site at any time when it is occupied by a government department, if that site is being or has been used by that department as mentioned in section 9 of NIA 65;

- (d) Any site in a relevant territory other than the United Kingdom at any time when that site is being used for the operation of a relevant installation by a relevant foreign operator.

8.8 The meaning of item a) above needs no further explanation. Item b) above is no longer of such significance since four of the UKAEA sites involved in nuclear activities are now licensed sites and hence covered by item a) above. The UKAEA site at Culham is not licensed and hence is a relevant site under item b) above. Item c) refers to section 9 of NIA 65; in the context of this guidance it means the site to which the transfer is being made would be a licensed site if the NIA 65 applied to the Crown. Item d) does not apply since the LC only applies to Great Britain.

CONSIGN

There is no specific definition of “consign” given in NIA 65 or in ONR’s Licence Conditions.