



ONR GUIDE			
LC19: Construction or Installation of New Plant			
Document Type:	Nuclear Safety Technical Inspection Guide		
Unique Document ID and Revision No:	NS-INSP-GD-019 Revision 4		
Date Issued:	October 2015	Review Date:	October 2018
Approved by:	Andy Lindley	Director, Head of Operational Inspection Specialism	
Record Reference:	TRIM Folder 1.1.3.564. (2015/370639)		
Revision commentary:	Intermediate review		

TABLE OF CONTENTS

1	INTRODUCTION	2
2	PURPOSE AND SCOPE	2
3	LICENCE CONDITION 19: CONSTRUCTION OR INSTALLATION OF NEW PLANT	2
4	PURPOSE OF LICENCE CONDITION 19	3
5	GUIDANCE ON ARRANGEMENTS FOR LC 19.....	3
6	GUIDANCE ON INSPECTION OF ARRANGEMENTS FOR LC 19.....	4
7	GUIDANCE ON INSPECTION OF IMPLEMENTATION OF ARRANGEMENTS FOR LC 19	5
8	GUIDANCE ON INSPECTION OF A LICENSEES CONTROL OF CONVENTIONAL HEALTH AND SAFETY.....	6
9	CONSULTATION WITH OTHER REGULATORS.....	7
10	REFERENCES	7

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 The purpose of this guidance is to facilitate a consistent approach to LC 19 compliance inspection and to provide assistance to inspectors while carrying out their duties in this area. The guidance should not be regarded as mandatory. Although every attempt has been made to deal with all the key features which are likely to arise in inspecting for compliance against this licence condition additional aspects may need to be examined to ensure a comprehensive and complete inspection.

2.2 The guidance does not indicate when or to what extent these compliance inspections should be made as these matters are covered in individual inspectors' inspection programmes.

2.3 Facilities covered by LC 19 arrangements should follow the principle of 'Security by Design'. Therefore, Inspectors should ensure that for sites where ONR has the appropriate vires the licensee is aware of this principle, and that they engage with specialist security staff to achieve this aim.

2.4 The guidance provided is split into four main elements:

- 1) Purpose of the Licence Condition
- 2) Guidance on arrangements for LC 19.
- 3) Guidance on inspection of arrangements.
- 4) Guidance on inspection of implementation of arrangements.

3 LICENCE CONDITION 19: CONSTRUCTION OR INSTALLATION OF NEW PLANT

19(1) Where the licensee proposes to construct or install any new plant which may affect safety the licensee shall make and implement adequate arrangements to control the construction or installation.

19(2) The licensee shall submit to the ONR for approval such part or parts of the aforesaid arrangements as the ONR may specify.

19(3) The licensee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless the ONR has approved such alteration or amendment.

19(4) The aforesaid arrangements shall where appropriate divide the construction or installation into stages. Where the ONR so specifies the licensee shall not commence nor thereafter proceed from one stage to the next of the construction or installation

without the consent of the ONR. The arrangements shall include a requirement for the provision of adequate documentation to justify the safety of the proposed construction or installation and shall where appropriate provide for the submission of this documentation to the ONR.

19(5) The licensee shall, if so directed by the ONR, halt the construction or installation of a plant and the licensee shall not recommence such construction or installation without the consent of the ONR.

4 PURPOSE OF LICENCE CONDITION 19

- 4.1 This Licence Condition is part of the group of conditions (LCs 19, 20, 21 22 & 35) that require the licensee to provide a system of rigorous and appropriate control of any aspect of the construction or installation, commissioning, modification to/experiment on or decommissioning of a new or existing plant that may affect safety. The purpose of these arrangements is to maintain the integrity of the plant's design and thus compliance with its nuclear safety case.
- 4.2 LC19 arrangements are aimed specifically at the construction or installation of new plant which may be part of a new or existing nuclear installation. In the case of the latter the new plant may be constructed within the envelope of an existing plant facility. In such circumstances the licensee may wish to introduce the new plant as a modification to an existing plant, i.e. LC22 Modification or experiment on existing plant. Either way the arrangements shall address the impact of the introduction of the new plant upon safety of the existing installation. In addition, the arrangements shall clearly identify and define ownership and responsibilities both during construction and installation and prior to commencement of commissioning.
- 4.3 Modifications to the design of plant under construction shall be progressed under arrangements made under LC 20.
- 4.4 A modification or experiment on an existing plant and/or changes to an existing facility or process shall be progressed under arrangements made under LC 22 as appropriate.

5 GUIDANCE ON ARRANGEMENTS FOR LC 19

- 5.1 In addition to the general requirements for all Licence Conditions the licensee's arrangements shall satisfy the specific Licence Condition requirement(s) for Licence Condition 19 which are:
- 1) A clear requirement that the arrangements control construction or installation of new plant which may affect safety. 19 (1)
 - 2) The requirement to submit for **approval** to the ONR those parts of the arrangements the ONR may **specify**. 19 (2)
 - 3) The requirement that once **approved** by the ONR arrangements cannot be altered or amended without the **approval** of the ONR. 19 (3)
 - 4) The requirement, where appropriate, that the construction or installation shall be divided into stages. 19 (4)
 - 5) The requirement that where the ONR so **specifies**, the licensee shall not commence nor thereafter proceed from one stage to the next without the **consent** of the ONR thereby providing regulatory control by requiring hold points in the implementation process. 19 (4).
 - 6) The requirement for the provision of adequate safety documentation to justify the safety of the construction or installation and where appropriate provide for the submission of this documentation to the ONR. 19 (4).

- 7) The requirement to halt the construction or installation if so directed by the ONR and not to recommence without the consent of the ONR. 19 (5)

6 GUIDANCE ON INSPECTION OF ARRANGEMENTS FOR LC 19

- 6.1 The following list includes elements of good practice which have been compiled from information currently available. This list is neither exclusive nor exhaustive and will be subject to review and revision in the light of operational experience. Good practice elements may exceed minimal compliance requirements.
- 6.2 If licensees have generic model(s) for arrangements then it is for the site to justify any deviation from the model(s). Site staff should be able to demonstrate how their arrangements meet the regulatory requirements. **[Note: not all licensees use generic models].**
- 6.3 Arrangements shall address the licence condition requirements.
- 6.4 Arrangements should include the appropriate use of the licensee's arrangements under LC14 for the production and assessment of the safety case covering construction, manufacture, commissioning, operation and decommissioning of the new plant. The licensee's programme for construction and installation shall include the time necessary for ONR, and other regulators, to complete an assessment of the safety submission. This time shall be independent of, and additional to, the time required for the licensee to apply its own internal peer review and governance processes to the safety submission.
- 6.5 The arrangements for construction and installation shall include the management of technical queries, non-conformities and omissions, etc. In the event that a technical query, non-conformity or omission modifies the design of the new plant, the arrangements shall require such modifications be managed in accordance with the licensee's arrangements for compliance with LC20: Modifications to design of plant under construction.
- 6.6 Arrangements for the construction and installation of a new plant at an existing installation shall address the impact upon, and the continued validity of, that installation's safety case.
- 6.7 Where the introduction of a new plant at an existing installation impacts upon the extant safety case the licensee shall use its arrangements under LC22: Modification or experiment on existing plant, to manage that impact.
- 6.8 Where the new installation is constructed on a licensed site separate from, but adjacent to, an existing licensed site the arrangements should include appropriate liaison with the licensee of the adjacent site to manage the impact of construction or installation upon the safety and security of the adjacent site.
- 6.9 Arrangements should include for the preservation and security of completed structures and/or installed equipment until such time they are required for commissioning and/or responsibility is transferred from construction/commissioning organisation to the nuclear installation's operations organisation.
- 6.10 Arrangements should require that there is a clear linkage to the arrangements for compliance with associated licence conditions. For example:
- LC6: Documents, records, authorities and certificates.
 - LC10: Training.

- LC 12: Duly authorised and suitably qualified and experience persons.
 - LC 13: Nuclear Safety Committee.
 - LC 14: Safety Documentation.
 - LC 17 Management systems.
 - LC 20; Modifications to design of plant under construction.
 - LC 22: Modification or experiment on existing plant.
 - LC36: Organisational capability.
- 6.11 ONR's internal guidance "Construction Assurance" ([T/AST/076](#)), Ref 1, provides guidance and advice that will inform a judgement on the adequacy of a licensee's arrangements for civil engineering aspects of construction assurance. The guidance may also inform ONR's judgement of the broader aspects of the licensee's arrangements for securing construction and installation assurance.
- 6.12 The [IAEA Specific Safety Guide SSG-38](#), Ref 2, provides recommendations and guidance based upon international best practice and applies to the construction stage of new nuclear installations and to major modifications and refurbishment of existing nuclear installations. The guide may also inform a judgement on the adequacy of the licensee's arrangements for compliance with LC19.
- 6.13 In order to facilitate ONR's use of primary powers to permission the construction or installation of a new plant under LC19(4), the licensee shall, where appropriate, divide the construction or installation programme into stages and have arrangements for managing both the commencement of and also proceeding from one stage to the next of, the programme, e.g. via programme hold points. Such arrangements shall recognise ONR's option to specify that the licensee shall not commence nor thereafter proceed from one stage to the next of the construction installation without the consent of ONR.
- 6.14 The most recent [Treasury Solicitor's advice](#), Ref 3, on the use of primary powers confirms that ONR may opt to permission all or only selected stages of the construction or installation. The advice also extends to sample Licence Instruments for specifying individual stages or hold points.
- 6.15 The licensee shall give ONR the option to exercise flexibility when permissioning construction or installation of a new plant. Thus the arrangements should give ONR the necessary derived powers via the use of licensed instruments to, for example, agree or acknowledge the licensee's intent to commence or proceed from one stage to the next of the construction or installation.
- 6.16 The ONR internal guidance "Flexible Permissioning including the use of Derived Powers" ([NS-PER-GD-001](#)), Ref 4, will inform a judgement on the acceptability of the derived powers contained within a licensee's arrangements by reference.
- 7 GUIDANCE ON INSPECTION OF IMPLEMENTATION OF ARRANGEMENTS FOR LC 19**
- 7.1 Inspectors are required to apply their experience and discretion to determine the extent and depth of a particular inspection taking due account of a number of factors such as safety significance, novelty, complexity, importance and technical specialism of the area.

- 7.2 The following list of areas for inspection of arrangements for compliance with LC 19 has been compiled from best information available. This list is neither exclusive nor exhaustive and will be subject to review and revision in light of operational experience.
- 7.3 Inspect the licensee's safety classification system for construction or installation of new plant, challenge as necessary.
- 7.4 Inspect licensee's implementation of its arrangements to construct or install any new plant which may affect safety, including whether:
- 1) work has been approved before commencement;
 - 2) responsibilities for securing and maintaining compliance with the nuclear safety case are clearly defined and recognised, including interfaces between licensees and contractors;
 - 3) appropriate instructions have been written for significant on-site activities having the potential to impact nuclear safety;
 - 4) the licensee's oversight of the contractors' control and supervision of construction and installation activities is adequate; and,
 - 5) adequate segregation is in place to limit interaction with other operational plant.
- 7.5 Inspect the application of the licensee's system for progressing issues arising from design, construction or installation activities including the management of technical queries, concessions and omissions.
- 7.6 Inspect the arrangements for ensuring appropriate links to the safety case requirements for every stage of construction and installation and that those responsible for undertaking and implementing these activities are aware of/have access to the safety case requirements.
- 7.7 Inspect the time limits for completion of construction or installation activities and that there are no undue delays. Although delays are largely a commercial matter for the licensee, clearly there is a need for the inspector to ensure that this does not impact upon ONR's ability to assess any safety documentation in support of its permissioning of construction or installation.. Progress on some activities may be critical to the success of other projects. The licensee should recognise the knock-on effects of delays.
- 7.8 Inspect the packaging, shipping, handling, receipt and storage of equipment, including at off-site manufacturing facilities, to prevent abuse, misuse, damage, deterioration or loss of identification
- 7.9 Inspect the arrangements for preserving and securing completed structures and installed equipment pending commencement of commissioning and/or transfer of responsibility for ownership of the same to the licensee's operations organisation, e.g. exposure to severe environments and internal/external hazards and contamination by foreign materials.
- 7.10 Inspect the licensee's arrangements for the retention of documents, records, authorities and certificates relating to the construction and installation of nuclear safety related structures, systems and components.
- 8 GUIDANCE ON INSPECTION OF A LICENSEES CONTROL OF CONVENTIONAL HEALTH AND SAFETY.**

- 8.1 Inspectors are referred to ONR's in-house Conventional Health and Safety and Fire Safety Team for advice on relevant non-nuclear health and safety statutory requirements applicable to construction and installation activities. Inspectors may also wish to consult Nuclear Safety Technical Inspection Guide [NS-INSP-GD-051](#) - The Regulation of Conventional Safety on UK Nuclear Sites, Ref 6..

9 CONSULTATION WITH OTHER REGULATORS

- 9.1 The inspector should refer to relevant [Memoranda of Understanding](#) and published internal guidance "Protocol for Seeking Advice from the Environment Agencies on The Management of Higher Activity Wastes" ([NS-PER-GD-002](#)) to ensure that ONR's regulation of construction or installation is informed by appropriate consultation and liaison with other regulatory bodies, e.g. Environment Agency, the Scottish Environment Protection Agency, the Health and Safety Executive.

10 REFERENCES

1. TECHNICAL ASSESSMENT GUIDE Construction Assurance. T/AST/076.
2. IAEA SAFETY STANDARDS Construction for Nuclear Installations. Specific Safety Guide No. SSG-38. IAEA Website.
3. HPC - LC19(4) Specifications – Consent to Commence Construction. Treasury Solicitor's Email 29 January 2015. TRIM 2015/36218
4. ONR NUCLEAR SAFETY PERMISSIONING GUIDE Flexible Permissioning including the use of derived powers. NS-PER-GD-001.
5. ONR NUCLEAR SAFETY TECHNICAL GUIDE The regulation of conventional health safety on UK nuclear sites. NS-INSP-GD-051.
6. AGENCY AGREEMENTS. Memoranda of Understanding (MOUs) and Working Arrangements Protocols.
7. ONR NUCLEAR SAFETY GUIDE. Protocol for seeking advice from the environment agencies on the management of highly active wastes. NS-PER-GD-002.