



ONR GUIDE			
LC24 - OPERATING INSTRUCTIONS			
Document Type:	Nuclear Safety Technical Inspection Guide		
Unique Document ID and Revision No:	NS-INSP-GD-024 Revision 6		
Date Issued:	September 2019	Review Date:	February 2023
Approved by:	Kulvinder McDonald	Head of Operational Inspection	
Record Reference:	CM9 Folder 1.1.3.979. (2020/209684)		
Revision commentary:	Rev 5: Typographical error corrected. No significant changes from Revision 4. Rev 6: Updated review period		

TABLE OF CONTENTS

1	INTRODUCTION	2
2	PURPOSE AND SCOPE	2
3	LICENCE CONDITION 24: OPERATING INSTRUCTIONS	2
4	PURPOSE OF LICENCE CONDITION 24	2
5	GUIDANCE ON ARRANGEMENTS FOR LC24	3
6	GUIDANCE ON INSPECTION OF ARRANGEMENTS AND THEIR IMPLEMENTATION..	4
7	FURTHER READING	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 part of the suite of documents provided by ONR for this purpose.

2 PURPOSE AND SCOPE

- 2.1 The purpose of this guidance is to promote a consistent approach to Licence Condition 24 (LC 24) compliance inspection and to provide guidance to inspectors in carrying out their duties in this area. The guidance should not be regarded as either comprehensive or mandatory. Further guidance is also available in the relevant TAG (NS-TAST-GD-060).
- 2.2 The guidance provided is divided into three main elements:
- 1) Purpose of the Licence Condition.
 - 2) Guidance on arrangements for LC24.
 - 3) Guidance on inspection of arrangements and their implementation.

3 LICENCE CONDITION 24: OPERATING INSTRUCTIONS

24(1) The licensee shall ensure that all operations which may affect safety are carried out in accordance with written instructions hereinafter referred to as operating instructions.

24(2) The licensee shall ensure that such operating instructions include any instructions necessary in the interests of safety and any instructions necessary to ensure that any operating rules are implemented.

24(3) The licensee shall, if so specified by ONR, furnish to ONR copies of such operating instructions and when any alteration is made to the operating instructions furnished to ONR, the licensee shall ensure that such alteration is furnished to ONR in such time as may be specified.

24(4) The licensee shall make and implement adequate arrangements for the preparation, review and amendment of such operating instructions.

24(5) The licensee shall submit to ONR for approval such part or parts of the aforesaid arrangements as ONR may specify.

24(6) The licensee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless ONR has approved such alteration or amendment.

4 PURPOSE OF LICENCE CONDITION 24

- 4.1 The purpose of LC24 is to ensure that all operations which may affect safety are carried out in accordance with written instructions (i.e. operating instructions) which are prepared, reviewed and amended in accordance with arrangements made and implemented by the site.

- 4.2 Operating instructions produced under this licence condition should ensure that operations that may affect safety are adequately controlled and that any operating rules are implemented.
- 4.3 Instructions should be clear and unambiguous and should be consistent with the safety case, its assumptions, and the operating limits and conditions.
- 4.4 Instructions should also cover normal operation and anticipated operational occurrences, storage and control of nuclear matter, radioactive material and radioactive waste, fuel handling, Examination Inspection Maintenance Testing (EIMT) and instructions to control work.
- 4.5 The instructions should reflect all operator actions identified as necessary to ensure the operability of plant and its ability to influence a safety function, including design requirements, equipment qualification requirements, and manufacturers recommendations.
- 4.6 Instructions provided to cover accident conditions and emergency conditions, are covered in guidance provided in relation to other LCs such as LCs 11, 13(11), 23(3) and 28(8); these may include emergency operating procedures, and for power reactors Symptom Based Emergency Response Guidelines (SBERGs) and Severe Accident Guidelines (SAGs). These are likely to include both event and symptom based approaches to cover such conditions.
- 4.7 If deemed appropriate, LC24(3),(5)&(6) provide the power to intervene to specify and approve (freeze) the arrangements for the production and amendment of operating instructions, and to require the licensee to furnish copies of specified operating instructions.

5 GUIDANCE ON ARRANGEMENTS FOR LC24

- 5.1 The Licensee should establish and implement arrangements for the preparation, control, distribution, review, implementation, use and amendment of operating instructions to comply with the requirements of LC 24(4).
- 5.2 The Licensee's arrangements should cover all LC requirements, and specifically should require that Operating Rules (LC 23) be implemented by suitable and sufficient operating instructions.
- 5.3 The licensee should identify the person(s) who have responsibility for ensuring that operations are at all times carried out in accordance with approved operating instructions.
- 5.4 The arrangements should ensure that operational activities which may affect safety are covered by approved, written operating instructions which are consistent with the definition of operations provided in LC 1. This should include all operating modes, configurations and conditions for the plant, including start-up, operation, and shutdown.
- 5.5 The licensee should ensure that where operations are carried out in accordance with written instructions under LC 24 that the undertaking of work, the outcome from the work, and any adverse conditions revealed by the work, should be recorded and addressed in compliance with their arrangements made under this and related licence conditions.
- 5.6 The licensee's arrangements should ensure its operating instructions include appropriate details of how work on structures, systems and components (SSCs) which may affect safety is controlled, and anticipate requirements implicit in the associated work management systems, including hazard and risk assessments, job briefings and critical task expectations.

- 5.7 The Licensee's arrangements should comply with an appropriate quality management system in accordance with LC 17, and conform to the principles laid down by IAEA.
- 5.8 Amendments to operating instructions should be documented and assessed in accordance with LCs 14 and 22 to identify the potential effect of changes on nuclear safety, and processed subsequently in line with LC 22, where appropriate to do so.
- 5.9 The Licensee's arrangements should ensure that persons expected to prepare, control, distribute, review, implement, use and amend operating instructions are Suitably Qualified and Experienced Persons (SQEP) to do so, and that personnel receive adequate training in accordance with the requirements of LCs 10, 12 and 26.
- 5.10 The arrangements should ensure that any failure to comply with an operating instruction, in respect of any operation that may affect safety, is detected and reported.

6 GUIDANCE ON INSPECTION OF ARRANGEMENTS AND THEIR IMPLEMENTATION

- 6.1 This part of the guidance is to assist inspectors in judging the adequacy of the licensee's arrangements and their implementation. The following list is neither exclusive nor exhaustive and will be subject to review and revision in light of operational experience. However it provides a list of aspects of LC 24 compliance requirements that might be examined during routine inspections carried out on the basis of sampling. Further guidance is available in the relevant TAG (NS-TAST-GD-060).
- 6.2 Inspectors should consider:
 - Confirming that the arrangements made under LC 24(4) are identified in the licensee's document management system.
 - Ensuring the arrangements meet the licensee's QMS requirements, are current, and that responsibilities have been allocated.
 - Confirming that any operating instructions which have been specified under LC 24 (3 and 5) are appropriately highlighted and controlled to minimise risk of LC non-compliance.
 - Checking that an adequate system is in place to direct staff to use the correct operating instructions, and to direct them to be familiar with any changes, both temporary and permanent, to operating instructions relevant to their duties and responsibilities.
 - Checking a sample of amended operating instructions to confirm that, where the amendments may be considered to impact nuclear safety, appropriate use of the licensee's LC 22 modification process has been made.
 - Checking a sample of LC 22 modifications to confirm that any subsequent amendments to operating instructions are consistent with the revised safety case, operating limits and conditions, and the Licensee's QMS arrangements.
 - Confirming that the Licensee provides suitable and sufficient resources to support LC 24 compliance. Confirm that operating instructions have undergone review in line with the Licensee's arrangements. Also, checking whether there are currently documents awaiting modification, review and / or validation and how the Licensee is managing resolution of this backlog to ensure associated risks are ALARP.
 - Checking logs and any other documents or records, for any reference to non-compliance with an operating instruction and follow up the event with the relevant manager or individual concerned. Checking that the requirements of LC 7 and

other LCs have been followed-up, and that the event has been properly managed under the licensee's arrangements. Also confirming that, where appropriate, the operating instruction has been amended to reduce the risk of non-compliance in the future.

6.3 From time to time, Inspectors should consider reviewing a sample of operating instructions to confirm that:

- Operating instructions have been prepared, reviewed, implemented and amended by SQEP persons who have received appropriate training / are appropriately supported to fulfil these purposes.
- Their content is clear and unambiguous.
- They clearly describe how tasks will be carried out and contain all necessary prerequisites, checks, precautions, and actions to be taken in the interests of safety.
- Operating instructions are consistent with the safety case, any associated operating limits and conditions and the Licensee's arrangements.
- Operating instructions take due account of the potential effect of actions on potential plant hazards and where necessary consider their effect on operational risk using appropriate methods.
- Operating instructions include activities carried out on Systems, Structures and Components (SSCs), which may affect safety systems or systems related to safety, and ensure that safety functions, and actions supporting safety functions, are capable of being met. These operating instructions should include redundant and diverse provisions, and back-up or stand-by arrangements, including availability of consumable items and supporting supplies.
- Operating instructions are consistent with conservative actions, and provide information necessary to recover from malfunctions, faults, or failures during the operations.
- Where the operating instructions represent a single tier within a hierarchy of instructions they should provide a margin of safety to the instructions at the higher tier level, thus establishing successive safety barriers as a contribution to the defence in depth principle applied on the plant.
- Where appropriate, operating instructions define how plant should be brought back within the safe working envelope, if it is discovered to be outside the limits and conditions specified by the safety case and / or other instructions and procedures.
- Instructions are consistent with operation of the plant remaining ALARP.

6.4 A workplace / on-plant review of the use of operating instructions should also be considered to confirm that:

- Personnel have the necessary operating instructions at the work face and seek evidence that they are being used appropriately during task completion.
- Operators / maintenance personnel understand the conditions for use and the meaning of the instruction, and whether they consider the Operating instructions provide a clear and adequate understanding of requirements.
- Personnel understand the Licensee's expectations regarding procedure use and

adherence. Seek evidence of the application of related tools and techniques at the work face.

- Personnel understand what to do if they identify an error in the instruction or they do not fully understand its content. Additionally, confirm the operating instruction supports this process.
- Walk / talk through a section of the operating instruction to confirm that the format and content is appropriate to the task / work environment (i.e. paper documents might not be appropriate if working outside and / or in hazardous environments).
- Confirm that potential risks arising from human error are minimised¹ (e.g. consistency between the content of instruction and labelling in the workplace).
- Means via which amendments to operating instructions should be recorded and requested are understood and complied with. Ask personnel how the operating instruction could be improved and confirm that their suggestions are captured by the Licensee for future consideration.
- Contractors should be included in this review where they carry out operations on SCCs that may affect safety.

¹ For an in-depth inspection, the Site Inspector should consider requesting Human Factors Specialist support.

7 FURTHER READING

- 7.1 IAEA Safety Fundamentals SF1.
- 7.2 IAEA Specific Safety Requirement SSR-2/2.
- 7.3 IAEA Safety Guide NS-G-2.2 Operational Limits and Conditions and Operating Procedures for Nuclear power Plants.
- 7.4 ONR Guidance – NS-INSP-GD-023 – LC23 Operating Rules.
- 7.5 ONR Guidance - NS-TAST-GD-035 – Limits and Conditions for Nuclear Safety (Operating Rules)
- 7.6 ONR Guidance - NS-TAST-GD-060 – Procedure Design and Administrative Controls
- 7.7 IAEA Safety Glossary.
- 7.8 WENRA Reactor Reference Safety Levels.
- 7.9 EUROPEAN COUNCIL DIRECTIVE 2009/71/EURATOM - Establishing a Community framework for the nuclear safety of nuclear installations.