

NUCLEAR SAFETY DIRECTORATE - BUSINESS MANAGEMENT SYSTEM

TECHNICAL INSPECTION GUIDE
GUIDANCE: LC23 OPERATING RULES

T/INS/023

ISSUE 001

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1. Purpose & Scope

1.1 The purpose of this guidance is to facilitate a consistent approach to LC 23 compliance inspection and to provide assistance to inspectors while carrying out their duties in this area. The guidance should not be regarded as either comprehensive or mandatory.

1.2 The guidance provided is split into four main elements:

- 1) Purpose of the Licence Condition
- 2) Guidance on arrangements for LC 23.
- 3) Guidance on inspection of arrangements.
- 4) Guidance on inspection of implementation of arrangements.

2. Licence Condition

LICENCE CONDITION 23: OPERATING RULES

23(1) The licensee shall, in respect of any operation that may affect safety, produce an adequate safety case to demonstrate the safety of that operation and to identify the conditions and limits necessary in the interests of safety. Such conditions and limits shall hereinafter be referred to as operating rules.

23(2) The licensee, where the Executive so specifies, shall refer the operating rules arising from paragraph (1) of this condition to the relevant nuclear safety committee for consideration.

23(3) The licensee shall ensure that operations are at all times controlled and carried out in compliance with such operating rules. Where the person appointed by the licensee for the purposes of condition 26 identifies any matter indicating that the safety of any operation or the safe condition of any plant may be affected that person shall bring that matter to the attention of the licensee forthwith who shall take appropriate action and ensure the matter is then notified, recorded, investigated and reported in accordance with arrangements made under condition 7.

23(4) The licensee shall submit to the Executive for approval such of the aforesaid operating rules as the Executive may specify.

23(5) The licensee shall ensure that once approved no alteration or amendment is made to any approved operating rule unless the Executive has approved such alteration or amendment.

23(6) Notwithstanding the preceding provisions of this condition the Executive may, if in its opinion circumstances render it necessary at any time, agree to the temporary suspension of any approved operating rule.

3. Purpose of Licence Condition 23.

3.1 This Condition is to ensure that all operations that may affect safety are supported by an adequate safety case and that this safety case identifies the conditions and limits which ensure that the plant or process is kept in a safe condition. It applies to all operations as identified in Condition 1(1). The safety case should distinguish between limits and conditions which are necessary because they define the safe envelope (and which thus are Operating Rules), and those which are merely desirable, for example, those which may prevent unnecessary reductions in life expectancy of the plant components but which have no immediate effect on safety.

3.2 This licence condition imposes a specific requirement on the licensee, not a requirement to make and implement adequate arrangements. We would however expect that written procedures were produced to ensure and make visible compliance with this condition.

4. Guidance on procedures for LC 23.

4.1 This licence condition does not formally require the licensee to make and implement adequate arrangements; but written procedures should help ensure compliance with this condition and make that compliance auditable and visible.

4.2 Where licensees have generic models (and not all do) for these procedures, departures from the models should be justified.

4.3 Procedures should address all the licence condition requirements.

4.4 Procedures should be readily available and should be reasonably up to date, signed by an appropriate senior manager and controlled under a quality management system compliant with the requirements of LC17.

Safety Cases

4.5 The procedures should state that safety cases will be produced for all operations that may affect safety. "Operations" should be defined in accordance with LC1 and include maintenance, examination, testing and operation of the plant and the treatment, processing, keeping, storing, accumulating or carriage of any radioactive material or radioactive waste.

4.6 The procedures should state that the safety cases required under LC23(1) will be produced and assessed in accordance with LC14 arrangements.

4.7 The procedures should state that safety cases must identify all the conditions and limits necessary in the interest of safety to ensure that operations do not take place outside the safe operating envelope. The safety case should also identify the suitable and sufficient safety mechanisms, devices and circuits (required by LC27) which need to be available.

4.8 The procedures should state that safety cases should distinguish between limits which are "desirable" (eg for economic or plant life reasons) and those conditions and limits which are "necessary" in terms of nuclear safety (ie, to ensure that the plant operates within a demonstrably safe envelope). They should state that the latter form the operating rules (ORs), and that they will be implemented by operating instructions in accordance with LC24 arrangements.

Operating Rule Principles

4.9 Operating rules (ORs) will be derived from safety cases and include all the conditions and limits necessary in the interests of safety. Details of the safety case should not appear within the OR itself, but procedures should identify supporting documentation where an explanation of the origin and purpose of an OR may be found. Procedures should identify who is responsible for ensuring compliance with the ORs.

4.10 Applicability of the ORs must be clearly defined so that operators understand when each OR is relevant and must be complied with. For example, some Rules are applicable only during normal operation and others only when the plant is shut down.

4.11 The procedures should define how OR compliance is monitored.

4.12 The ORs should refer as far as is practicable, only to plant parameters and conditions which can be directly monitored (and preferably directly controlled) by operations staff. Staff should not have to process information presented to them in order to determine whether plant is operating within OR limits unless they are appropriately trained and authorised to do so.

4.13 The procedures for producing safety case and ORs should make sure that where different safety concerns lead to differing limits on the same plant parameter, then ORs will specify only the most constraining limit. OR limits should be set such that if plant is operated within these limits it will remain safe even if the faults as outlined in safety cases actually occur.

4.14 There should be a clear and shared understanding of what is meant by Operating Rules, and this may mean that they are known by different names at different sites. There should also be a clear understanding that, for the purposes of LC 23, operating rules may be approved (frozen) or not approved by NII, depending on the degree of regulatory control required on the different limits and conditions.

Referring Operating Rules to the Nuclear Safety Committee

4.15 The procedures should recognise that the Executive may specify that ORs should be referred to the NSC for consideration. We would therefore expect to see consideration of ORs within the general terms of reference for the licensee's NSC in its LC13 arrangements.

Obligation to Comply with Operating Rules

4.16 The procedures should state that the licensee will ensure that operations are at all times controlled and carried out in compliance with the ORs.

4.17 The procedures should require that if for any reason a plant is found to be outside the ORs or the ORs are found to be inadequate, the licensee should report the matter to HSE in accordance with LC7.

4.18 The procedures should provide for the introduction of temporary and more restricting operating instructions of equivalent status to ORs if it was found that the ORs

were not providing the necessary levels of safety. Such temporary restrictions should be replaced by revised Operating Rules once the necessary revisions to the safety case have been completed and the rule change processed.

Suspension of Operating Rules

4.19 The procedures should include provision for the temporary suspension of an approved operating rule (or parts of it) following the agreement of HSE in accordance with LC23(6). Any request to the Executive for such suspensions should include a clear safety justification, the period for which the suspension is required, and indicate what temporary procedures will be in place during this period, and have completed due process in the licensee's system.

Interaction with HSE

4.20 Procedures should identify the person(s) having responsibility for reporting non-compliance to the Executive.

4.21 The procedures should show how the licensee will respond to a Specification issued under LC 23(4) and will ensure that once approved the ORs will not be altered without a further approval. .

4.22 The procedures should also identify the system whereby any constraints, caveats or conditions imposed by the Executive or by internal processes on the Op Rules are maintained.

5. Guidance on inspection of procedures for LC 23

5.1 Check the scope of any procedures and confirm that they cover all the requirements of the LC, all operations (as defined in LC1), and are subject to a Quality Management System (LC 7). Are the arrangements "in ticket" and are they reasonably up to date?

5.2 Are responsibilities clearly defined, both for the production, review and updating of the ORs, and for operating the plant or site in accordance with the Operating Rules?

5.3 Do the procedures focus on safety issues, on identifying any necessary safety mechanisms, devices and circuits, defining clearly operating rule applicability and the means of monitoring compliance. Are the parameters used in the rules directly measured and clearly understood?

5.4 Are procedures established for reporting failures to comply with the ORs, or for reporting deficiencies in the rules? Do the arrangements cover the creation of temporary

rules where necessary?

5.5 Do the procedures ensure the provision of adequate supporting information and training to the operators?

6. Guidance on inspection of implementation of procedures for LC 23

6.1 Check that safety cases have been produced for all operations that may affect safety as defined in accordance with LC 1.

6.2 Check that safety cases required under condition 23(1) are produced and assessed in accordance with LC 14 arrangements.

6.3 Check that safety cases identify all the conditions and limits necessary in the interest of safety to ensure that operations do not take place outside the safe operating envelope.

6.4 Check that details are included of the suitable and sufficient safety mechanisms, devices and circuits (required by LC 27) which must be available for the plant to be in operation.

6.5 Check that the copies of the procedures are available to the shift staff and that they state that the operating rules (ORs) require staff to monitor the plant limits and conditions, take appropriate controlling actions and report any deviations or non-compliance with the rule requirements.

6.6 Check that operations are at all times controlled and carried out in compliance with the ORs. Ensure that all operations are covered, and that instructions are written for carrying them out. within the Operating Rules, ie as defined in the safety case for the operation.

6.7 Check that instructions are provided stipulating how the plant would be brought back within a safe working envelope if a plant is discovered to be outside the limits and conditions specified by the safety case.

6.8 Check that the operating staff have available to them an authorised and up-to-date set of operating rules and supporting documents, and that an adequate system is in place which directs them to read such rules and ensures that, when changes are made, the operators are made timeously aware of changes. This system should also cater for any temporary suspensions of operating rules or the introduction of more restrictive temporary rules.

6.9 If when checking the principal site logs or any other documents or records there

appears to be a reference to a possible rule violation, follow this up with the appropriate licensee's representative. Check that if an infringement has occurred that the requirements of LC 7 have been followed, or if not followed, why not.

6.10 Review the operating rules and select a sample for examination. Examine the safety case and see whether a justification exists for the criteria set out in the rule. Discuss with operating personnel to check that they adequately understand the rule and that they actually check for compliance with the rule by taking or recording measurements or other physical checks. If the rule requires operator action or calculations to be made, then check that such supporting operations were completed, eg. a core flux map taken, and calculations completed eg. temperature assessment. If the rule requires that a certain number of safety mechanisms, devices or circuits are available check that this is so or has been the case, eg when work is being carried out under LCs 28 and/or 30 or in response to plant or equipment failure.

6.11 If any modifications have resulted in changes to operating rules, or required a new rule, check that the safety case has been completed under LC 22 arrangements and that from this the necessary operating envelope had been developed and appropriate limits specified.

6.12 Inspectors should check and confirm by inspection that licensees have in place procedures to ensure that at all times operations are within the conditions and limits known as Operating Rules (ORs) , and these ORs reflect the requirements of the current safety case.

6.13 OR parameters should be physically and preferably directly measurable but derived information may exceptionally be used. Where such derived information is used, it should be obtained via a formally defined and auditable route.

6.14 Any failure to comply with this Condition should invoke reporting arrangements under LC7.