Notice

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ACRONYMS

Term	*Meaning / Definition*
EIADR	Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999, as amended 2006
ES	Environmental Statement
HSE	Health & Safety Executive

1 Introduction

This document describes a revised set of questions to be used when reviewing the quality of Environmental Statements (ESs) submitted to the Health & Safety Executive (HSE) under the terms of the *Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999*, as amended [1]. The questions are based on the review method developed by UK EIA Centre [2], and have been modified to apply specifically to EIADR.

The revised questions presented within this document have been developed in response to comments received during a stakeholder workshop held to appraise the effectiveness of the ES review methods employed by HSE and its contractors [3]. Following the workshop, a comprehensive review of the original questions used in the UK EIA Centre Method was undertaken.

The use of the review tools will facilitate proportionality and consistency in the review of ES submitted for different sites and by different licensees. The tools will also provide transparency regarding the standards required from ES. The tools can be used by HSE to reach an initial view, though recourse to specialist contractors will still be used to inform decisions about ES that are particularly difficult, for example due to specific environmental factors at a particular site.

The outcome of the review of the original questions was a revised set of questions (see Section 2) that more accurately addressed the requirements for an ES submitted to HSE under EIADR.

2 Question Set for Reviewing the Quality of Environmental Statements Submitted under EIADR

The question set is arranged as a list of hierarchical topics for reviewing the quality of ESs submitted in application for decommissioning consent under the requirements of EIADR. There are four areas for review.

1. Description of the reactor decommissioning project, the local environment and the baseline conditions.

2. Identification and assessment of key impacts.

3. Alternatives and mitigation.

4. Communication of results.

In each of these areas there are several Categories of activity which must be completed if the area is to be dealt with in a satisfactory manner. Similarly, each Category contains several Sub-categories. Review Areas are designated by a single digit, e.g. 1.; within these

are Review Categories, designated by two digits, e.g. 1.1; and within each Review Category are Review Sub-categories, designated by three digits, e.g. 1.1.1.

2.1 Review Grading

Each review Sub-category must be addressed, with reference to the content of the ES, and judged according to the following scale:

- Adequate: the ES adequately details information on the environmental impact(s) of the proposed decommissioning project. The ES meets the requirements of Schedule 1 of EIADR and the regulator has sufficient information to confidently grant decommissioning consent.
- Insufficient Evidence: the review has identified deficiencies or gaps in the evidence presented that would prevent the immediate granting of decommissioning consent and additional evidence must be obtained from the licensee to verify information in the ES.
- Inadequate: the ES is not adequate as it does not provide sufficient information to adequately assess the effects of the proposed project. Therefore, further information must be requested from the licensee under Regulation 10 of the EIADR.

2.2 Wording Convention

One of the issues arising from the workshop was that consistency was required within the review questions, particularly regarding the meaning of “should” and “must”. The original question set phrased a number of questions using “should”, implying that the information sought by the question was optional or represented best practice rather than legislative compliance. It was not always the case that the required information was optional.

Consequently, the following convention has been adopted in the revised question set: where information is required by EIADR then the question form uses “must”. Where information is considered to be best practice through advice provided in HSE regulatory guidance or other non-regulatory requirement then “should” is used in the question form.

3 Revised Question Set

1. Description of the Reactor Decommissioning Project, the Local Environment and the Baseline Conditions

1.1 Description of the reactor decommissioning project: The project must be described including the physical characteristics, size and design. Quantities of materials needed during decommissioning, which may encompass the construction and operation of other facilities (secondary development) solely for the purposes of decommissioning, and a description of the waste generating processes must be included.

1.1.1 The purpose(s) and objectives of the decommissioning project should be explained.

1.1.2 The design and size of the decommissioning project must be described for each key stage of the project. Diagrams, plans or maps will usually be necessary for this purpose.

1.1.3 A decommissioning project programme, indicating the timing, duration and workforce numbers of key stages and decommissioning processes, should be provided.

1.1.4 The nature of the decommissioning processes intended to be employed during the project must be described – including dismantlement, decontamination and plant removal processes.

1.1.5 The nature and quantities of materials and natural resources needed during all phases of decommissioning must be described.

1.1.6 The means of transporting workers, raw materials and wastes to and from the site and the approximate quantities involved should be described.

1.1.7 Issues relevant to the Environmental Statement which are covered under other legislative and regulatory regimes should be explained.

1.1.8 The land area taken up by the project during all phases of decommissioning should be defined and clearly delineated on a map. The uses to which this land will be put should be described as should access and egress.

1.2 Wastes: The types and quantities of wastes which might be produced and the proposed disposal routes to the environment must be described. [NB: Wastes include all residual process materials, effluents and emissions. Waste energy, waste heat, noise, radiation etc, should also be considered.]

1.2.1 The types and quantities of waste matter, energy and other residual materials must be described, along with an indication of the phase of the project in which they occur.

1.2.2 The ways in which it is proposed to handle and/or treat wastes and residuals, together with the routes by which they will finally be disposed of to the environment, must be described.

1.2.3 The methods by which the quantities of residuals and wastes were calculated should be described. If there is uncertainty this should be acknowledged and ranges of confidence limits given where possible.

1.3 Environment description: The area and location of the environment likely to be affected by the decommissioning proposals must be described.

1.3.1 The environment expected to be affected by the decommissioning project should be indicated with the aid of a suitable map of the area.

1.3.2 The site surroundings and environmental context, including physical and natural features, must be described broadly enough to include any potentially significant effects occurring away from the immediate decommissioning site.

1.4 Baseline conditions: A description of the affected environment as it is currently and as it could be expected to develop if the project were not to proceed, must be presented.

1.4.1 The significant aspects (EIADR, Sch 1, Part 1, Paragraph 3) of the affected environment must be identified and described, including aspects that affect other countries in the European Economic Area.

1.4.2 The methods and investigations undertaken for baseline data collection must be described and should be appropriate to the size and complexity of the assessment task. Any difficulties encountered in compiling the information must be indicated.

1.4.3 Existing data sources should have been searched and, where relevant, utilised. These should include, for example, local authority records and studies carried out by, or on behalf of, conservation agencies and/or special interest groups.

1.4.4 Local land use plans and policies should be consulted and other data collected as necessary to assist in the determination of the "baseline" conditions, i.e. the probable future state of the environment, in the absence of the project, taking into account natural fluctuations and human activities (often called the "do-nothing" scenario). Any difficulties encountered in compiling the information must be indicated.

2. Identification and Assessment of Key Impacts

2.1 Definition of impacts: Potential impacts of the decommissioning project on the environment must be investigated, described and should be determined as the predicted deviation from the baseline state.

2.1.1 A brief description of the impact identification methods must be given as should the rationale for using them.

2.1.2 A description must be given of the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project.

2.1.3 The likely effects of the decommissioning project must be investigated and described with particular regard to identifying effects on or affecting the environment.

2.1.4 Consideration must not be limited to events which will occur under design operating conditions; impacts that may arise from reasonably foreseeable abnormal situations during the whole decommissioning process should be described.

2.1.5 The impacts should be determined as the deviation from baseline conditions, i.e. the state of the environment as it exists before the decommissioning project begins.

2.2 Scoping: key impacts should be identified, taking into account the views of interested parties, and the main investigation centred on these; not all impacts should be studied in equal depth.

2.2.1 There must be a genuine attempt to contact the general public and special interest groups, and to consult with them on the project and its implications.

2.2.2 Key impacts should be selected for detailed investigation. Impacts not selected for detailed investigation should nevertheless be identified and the reasons they require less detailed investigation should be given.

2.3 Prediction of impact magnitude: the likely impacts of the decommissioning project on the environment should be described in exact terms wherever possible.

2.3.1 The data used to estimate the magnitude of the main impacts should be sufficient for the task and should be clearly described. Data sources should be clearly identified. Any technical deficiencies in the required data should be indicated and the means used to deal with them in the assessment should be explained.

2.3.2 The methods used to predict impact magnitude must be described and be appropriate to the size and importance of the projected impact.

2.3.3 Where possible, predictions of impacts should be expressed in measurable quantities with ranges and/or confidence limits as appropriate. Qualitative descriptions, where these are used, should be as fully defined as possible.

2.4 Assessment of impact significance: the expected significance that the projected impacts must be estimated. The sources of quality standards, together with the rationale, assumptions and value judgements used in assessing significance, should be fully described.

2.4.1 The significance of the impact(s) should be assessed and described, taking into account appropriate quality standards, assumptions and value systems. Impact significance should be clearly distinguished from impact magnitude.

2.4.2 The choice of quality standards, assumptions and value systems used to assess significance should be justified and any contrary opinions should be summarised.

3. Alternatives and Mitigation

3.1 Alternatives: the main alternatives studied by the licensee must be outlined in the Environmental Statement, and an indication of the main reasons for the choice detailed, taking into account the environmental effects.

3.1.1 Alternative decommissioning options must be considered. The main environmental advantages and disadvantages of these options must be discussed and the reasons for the final choice given.

3.1.2 Alternative decommissioning processes, designs and operating conditions must be considered. The main environmental advantages and disadvantages of these processes, designs and operating conditions must be discussed and the reasons for the final choice given.

3.2 Scope and effectiveness of mitigation measures: all significant adverse impacts must be considered for mitigation. Evidence must be presented to show that proposed mitigation measures will be effective when implemented.

3.2.1 The mitigation of all significant adverse impacts must be considered and, where practicable, specific mitigation measures must be put forward. Mitigation for minor adverse effects should also be considered.

3.2.2 It should be clear to what extent the mitigation methods will be effective when implemented. Any residual impact after mitigation should be described and justification provided as to why these impacts should not be mitigated further. Any secondary impacts from the mitigation measures themselves should also be assessed and described.

3.2.3 Where the effectiveness of mitigation measures is uncertain or dependent on assumptions, data should be introduced to justify the acceptance of these assumptions.

3.3 Commitment to mitigation: licensees should be committed to, and capable of, carrying out the mitigation measures and should present plans of how they propose to do so.

3.3.1 There should be a clear commitment by the licensee to the mitigation measures presented in the Environmental Statement. Details of how the mitigation measures will be implemented and function over the time span for which they are necessary should also be given.

3.3.2 Monitoring arrangements should be proposed to check the environmental impacts resulting from the implementation of the decommissioning project and their conformity with the predictions within the Environmental Statement. Provision should be made to adjust mitigating measures where unexpected adverse impacts occur. The scale of these monitoring arrangements should correspond to the likely scale and significance of deviations from expected impacts.

4. Communication of Results

4.1 Layout: the layout of the Environmental Statement should enable the reader to find and assimilate data easily and quickly. External data sources should be acknowledged.

4.1.1 The Environmental Statement should be logically arranged in sections or chapters. Unless the chapters themselves are very short, there should be chapter summaries. The whereabouts of important data should be signalled in a table of contents or index.

4.1.2 When data, conclusions or quality standards from external sources are introduced, the original source should be acknowledged at that point in the text. A full reference should also be included either with the acknowledgement, at the bottom of the page, or in a list of references.

4.2 Presentation: care should be taken in the presentation of information to make sure that it is accessible to the non-specialist.

4.2.1 Unnecessarily technical or obscure language in the Environmental Statement should be avoided. Tables, graphs and other devices should be used as appropriate.

4.2.2 Technical terms, acronyms and initials should be defined, either when first introduced into the text or in a glossary. Important data should be presented and discussed in the main text.

4.2.3 The Environmental Statement should be presented as an integrated whole. Data presented in separately bound appendices should be introduced and summarised in the main body of the text.

4.3 Emphasis: information should be presented without bias and receive the emphasis appropriate to its importance in the context of the Environmental Statement.

4.3.1 Prominence and emphasis should be given to potentially severe adverse impacts as well as to potentially substantial favourable environmental impacts. The Environmental Statement should avoid according space disproportionately to impacts which are not significant.

4.3.2 The Environmental Statement should be unbiased; it should not lobby for any particular point of view. Adverse impacts should not be disguised by euphemisms or platitudes.

4.4 Non-technical summary (NTS): There must be a clearly written non-technical summary of the main findings of the study and how they were reached.

4.4.1 There must be a non-technical summary of the main findings and conclusions of the study. Technical terms, lists of data and detailed explanations of scientific reasoning should be avoided.

4.4.2 The NTS summary should cover all main issues discussed in the Environmental Statement and contain at least a brief description of the project, its main alternatives and the

surrounding environment; an account of the main mitigation measures to be undertaken by the licensee; and, a description of any significant residual impacts. A brief explanation of the methods by which these data were obtained, and an indication of the confidence which can be placed in them, should also be included.

4 References

1. S.I. 1999/2892 Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999, as amended 2006 (S.I. 2006/657).

2. Lee, N., Colley, R., Bonde, J., & Simpson, J. (1999) Reviewing the Quality of Environmental Statements and Environmental Appraisals. EIA Centre, Department of Planning & Landscape, University of Manchester. Occasional Paper 55.

3. Atkins (2006) EIADR Environmental Statement Review Tools: Workshop Report. Report reference 5040008/05/12.

4. HSE (2004) Draft Guidance on Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999. Unpublished.

5. Atkins (2006) EIADR Environmental Statement Guidance Notes. Report Reference 5040008/05/14.