

**NATIONAL CENTRE FOR RISK ANALYSIS AND
OPTIONS APPRAISAL**

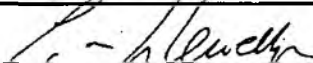
**GUIDANCE NOTE NUMBER 1
December 1997**

**Technical Review of the Post-Closure Safety Case for
the Drigg Low-Level Radioactive Waste Disposal
Site.**

Dr Susan Duerden

SUPERSEDED BY:

"ASSESSMENT OF THE POST-CLOSURE SAFETY
CASE DEVELOPMENT PROGRAMME FOR THE
DRIGG LOW-LEVEL RADIOACTIVE WASTE
DISPOSAL SITE - PHASE 2: REVIEW PLAN
AND INSTRUCTIONS FOR REVIEWERS"

Title: PCSC Development Programme Review Plan and Instructions for Reviewers	Report No: GN1 Version: 1.0 Issue Date: December 1997	
Approval	Signature	Date
Dr G Llewellyn		15/12/97

ENVIRONMENT AGENCY



056645

PREFACE

Drigg is an operational facility for the near surface disposal of solid, low level, radioactive waste (LLW). The site is owned and operated by British Nuclear Fuels plc (BNFL) and is located on the West Cumbrian coastal plain, south of BNFL's Sellafield site.

Disposals at Drigg are carried out under the terms of an authorisation granted under the Radioactive Substances Act 1993. The authorisation is subject to periodic review by the Environment Agency. BNFL are currently developing a post-closure safety case which is required by the Agency as part of the next authorisation review. In the interim period it has been agreed that BNFL will provide a series of documents on the development of the post-closure safety case (PCSC) for technical review by the Agency. This shall determine whether the scope and quality of BNFL's programme is likely to provide adequate support for the PCSC and determine the adequacy of the submissions with respect to requirements for authorisation.

This report describes the review methodology, criteria and associated procedures to be applied in undertaking technical review of the PCSC Development Programme.

Provision of comments and views by the Environment Agency, based on 'Interim BNFL Reports', does not place the Agency under any obligation to approve the Post-Closure Safety Case, submitted by BNFL in support of any subsequent authorisation review, nor binds the Agency in any way to grant an authorisation for continued operation of the Drigg site by BNFL.

Dr S Duerden
Mr I Porter
Environment Agency of England & Wales

CONTENTS

1.	Introduction	1
2.	Review Methodology	3
2.1	Background and Objectives	3
2.2	Review Method	4
3.	Review Guidance	12
3.1	General Review Guidance	12
3.2	Technical Review Criteria	13
4.	References	16

Appendices

1.	Procedure for Use of an Issue Resolution Form	17
----	---	----

List of Figures

2.1	Project structure diagram showing the principal routes of information flow	9
2.2	Project methodology diagram showing plans for document reviews and summary reporting	10
2.3	Steps in the review of documents	11

1. INTRODUCTION

The Environment Agency of England and Wales (the Agency) is responsible for authorisation of radioactive waste disposal under the Radioactive Substances Act 1993 (RSA 1993). British Nuclear Fuels Limited (BNFL) is currently disposing of low-level radioactive waste (LLW) in a shallow burial facility at Drigg in Cumbria. Periodically, the Agency reassesses its authorisation of BNFL's waste disposal activities.

The Agency expects that during the operational phase of a radioactive waste disposal site such as Drigg, the safety case relating to post-closure performance will be updated as the design and operating practices evolve, the actual waste inventory becomes known, and more site characterisation information becomes available. Periodic re-assessment is required in order to:

- Determine whether the safety case is consistent with the Guidance on Requirements for Authorisation (Environment Agency *et al.* 1997) [the GRA], and whether it is adequately supported by the on-going programme of site investigation, research, safety analyses and monitoring.
- To determine whether the conditions placed on disposal at the site are such as to ensure long-term safety and protection of the public.

As a condition of the current review of the authorisation of disposal at the Drigg site, BNFL will supply a Post-Closure Safety Case (PCSC) and supporting documentation for a subsequent authorisation review. Starting in 1997, BNFL will provide the Agency with a series of interim scientific and technical documents from the PCSC Development Programme, which together may form part of the PCSC submission.

The Agency will conduct its assessment of the PCSC in four phases:

- (i) A project-initiation phase.
- (ii) A phase reviewing the BNFL documents from the PCSC Development Programme.
- (iii) A phase reviewing the PCSC submission.
- (iv) A project-completion phase that will include development of any conditions that may be attached to the authorisation.

This review plan relates to the second of these phases.

The Agency's review of documents provided by BNFL from the PCSC Development Programme has two principal objectives:

- To determine the extent to which information supplied by BNFL fulfils the requirements¹ set out in the GRA, and to provide guidance to BNFL on the future direction of their programme.
- To identify the need for additional work by the Agency, such as model development, conduct of independent calculations, or examination of further BNFL documents, in order that the Agency can efficiently assess the PCSC when it is provided.

This review plan contains a description of the review methodology and guidelines and criteria for the review of the PCSC Development Programme. A further guidance document will be generated for the review of the PCSC submission itself, and will incorporate results from the review of the PCSC Development Programme.

Chapter 2 presents background and detailed objectives for the review (Section 2.1) and the review method and instructions (Section 2.2). Chapter 2 is supported by Appendix 1, which contains a procedure for using an Issue Resolution Form. This form is to be used for documenting and resolving technical issues and identifying possible areas for further detailed review, quantitative assessment, or other work.

Chapter 3 presents review guidance (Section 3.1) and an initial set of supplementary criteria (Section 3.2) developed by the Agency to assist in the review of the PCSC Development Programme.

¹ The GRA variously uses the terms Principles, Requirements, Supply of Information, and Additional Factors. For conciseness, these are referred to collectively as requirements in this document.

2. REVIEW METHODOLOGY

2.1 Background and Objectives

This Section briefly outlines the relevance of the project-initiation phase of the PCSC review to the overall review (Section 2.1.1), and provides detailed objectives for the review of the PCSC Development Programme.

2.1.1 Project initiation

The project-initiation phase comprised a review of the two previous assessments of the Drigg site. As part of these reviews, an initial list of key site-specific technical issues was identified that potentially affect the assessment of site safety. A set of review criteria that supplement the requirements of the GRA was developed relating to these issues. These supplementary criteria, which are set out in Section 3.2 of this document, will be used, along with the GRA, in the evaluation of the documents from the PCSC Development Programme. Further detailed review criteria will be developed as the documents from the PCSC Development Programme are reviewed.

2.1.2 Review of PCSC Development Programme

The background for the review of documents from the PCSC Development Programme is defined collectively by:

- The GRA (Environment Agency *et al.* 1997).
- The review guidance set out in this document.
- The review guidance set out in "Recommendations for Additional Quantitative Assessment: Guidance for Reviewers" (Environment Agency 1997).

The two principal objectives of this phase of the review are set out in Chapter 1. The following more detailed objectives have been developed to guide the review:

- To evaluate the documents from the PCSC Development Programme using relevant review criteria, and to provide constructive review comments to BNFL on a time scale that will allow appropriate revisions to the developing safety case.
- To identify further technical issues that may affect the assessment of site safety and to develop suitable criteria against which any responses made by BNFL may be assessed.

- To identify the need for more detailed reviews of issues raised and to specify appropriate criteria to be applied in these reviews.
- To identify the need for further quantitative assessment by BNFL and/or the Agency.
- To identify the need for other further work by the Agency, such as review of BNFL's site characterisation and interpretation programmes, or quality audits of BNFL's work programme.
- To provide a preliminary view on whether BNFL's PCSC is likely to constitute a sufficiently comprehensive examination of the relevant issues and whether it is likely to provide adequate estimates of future radiological impacts which could be used as a basis for regulatory decision-making.

2.2 Review Method

The Agency has commissioned a Contractor to act as Lead Reviewer of BNFL's PCSC Development Programme and the PCSC.²

In consultation with the Agency, the Lead Reviewer will establish a panel of experts to undertake document reviews on behalf of the Agency. This panel will include staff from the Agency and the Lead Reviewer, and may include additional experts sub-contracted by the Lead Reviewer. The composition of this panel will be modified as appropriate during the course of the review.

The Lead Reviewer will also establish an Integration and Performance Assessment Group (IPAG), comprising representatives from the Agency, the Lead Reviewer and the expert panel. The Lead Reviewer may establish additional Working Groups as appropriate to assist with the review of particular technical aspects of the PCSC Development Programme and the PCSC.

The relationships between the Agency, BNFL, the Lead Reviewer, and the expert panel are shown in Figure 2.1. The role of the Agency, and the procedures to be followed by the Lead Reviewer and the expert panel during the review of documents from the PCSC Development Programme are described below. The procedures are also depicted in Figures 2.2 and 2.3.

2.2.1 Role of the Agency

The Agency has a central role in the review process. The description here focuses on the interaction between the Agency and BNFL, and the Agency and the Lead Reviewer in the conduct and documentation of technical reviews from the PCSC Development Programme. The overall role of the Agency in the review process extends beyond the points presented below.

² The current Lead Reviewer commissioned by the Agency is Galson Sciences Limited.

Initial screening of documents. Following receipt of documents from BNFL, the Agency will evaluate whether they are of an appropriate standard for review. The aim of this initial evaluation is to determine whether review of the documents by the Agency would be constructive, either for providing guidance to BNFL on the future direction of their programme, or for contributing to the Agency's ability to assess the PCSC submission when it is provided. If the Agency considers that review would be constructive, the documents will be forwarded to the Lead Reviewer, who will manage the review.

Conduct technical reviews. The Agency may conduct technical reviews as appropriate. The procedures outlined in Section 2.2.3 below will apply to the conduct of such reviews.

Evaluate and approve reports and Issue Resolution Forms. The Agency will evaluate and approve all review guidance, review reports, and Issue Resolution Forms produced in the course of the review, prior to communicating them to BNFL. Any changes required by the Agency as a result of this evaluation will be incorporated by the Lead Reviewer.

Provide approved review guidance and review results to BNFL. Review results will be provided to BNFL on a time-scale that allows appropriate revisions to be made to the PCSC.

Evaluate responses from BNFL to issues raised. The Agency will inform BNFL of the outcome of its evaluation.

2.2.2 Technical reviews - Instructions for the Lead Reviewer

Establish review schedule and identify one or more reviewers for each BNFL document. For BNFL documents that pass the initial screening process, the Lead Reviewer will establish a review schedule and arrange for appropriate technical review by one or more expert reviewers. The allocation of documents to reviewers will be made on the basis of the technical areas addressed in the BNFL documents, the inter-relationships between different BNFL documents, and the expertise of the reviewers. The allocation will take account of views expressed by the Agency and by relevant Working Group Chairmen. The Lead Reviewer will also conduct technical reviews of documents.

Provide Technical Review Guidance. For each BNFL document, the Lead Reviewer will identify relevant sections of the GRA for consideration in the review. The reviews will determine whether the arguments being developed by BNFL adequately fulfil the requirements set out in the GRA. Technical Review Criteria (see Section 3.2) will be used to supplement the requirements in the GRA where further detail is required to guide the reviewer. Where concerns arise, reviewers will develop further, more detailed, review criteria, to assess BNFL's response in the next phase of the review.

Evaluate Review Reports and Issue Resolution Forms. The Lead Reviewer will evaluate the Review Reports and Issue Resolution Forms received from reviewers (see Section

2.2.3 and Appendix 1). In particular, the Lead Reviewer will evaluate any recommendations, requests for further information and/or analysis, and additional review criteria developed by reviewers. The Lead Reviewer will also consolidate as appropriate the Review Reports and Issue Resolution Forms if more than one expert reviewer has assessed a particular document. The Lead Reviewer will use the Review Reports to develop Position Papers for the Agency.

Evaluate responses from BNFL to issues raised, when requested to do so by the Agency.

Prepare Summary Reports as required. At the direction of the Agency, the Lead Reviewer may prepare Summary Reports describing the work of each Working Group. The aim of the Summary Reports is to provide an overview of issues that cross-cut more than one document. They will be prepared by the Lead Reviewer in consultation with the Agency and Working Group Chairmen.

Prepare Overview Report. Review results and Summary Reports will be presented and discussed at meetings of the IPAG. Based on the recommendations of IPAG, the Lead Reviewer will develop an Overview Report for the Agency containing the principal findings of this review phase and identifying priority issues on which review effort should be focused for the PCSC.

The format of reports prepared by the Lead Reviewer will conform with the Agency's style (set out in Environment Agency 1996).

2.2.3 Technical reviews - Instructions for reviewers

The different tasks that will be performed by the reviewers during the document reviews are set out below. This sequence of review tasks is also illustrated in Figure 2.3.

The Reviewer should assess each BNFL document using the General Review Guidance provided in Section 3.1. Reviewers should use this guidance to help structure their overall comments on the report. Each of the reviewer's comments should normally be supported by reference to specific parts of the BNFL document under review.

The Reviewer should evaluate each BNFL document against the relevant sections of the GRA and any supplementary Technical Review Criteria. Where concerns arise, the reviewer should propose detailed response criteria as appropriate. Appendix 1 contains the procedure to be followed for documenting this evaluation using the Issue Resolution Form.

The Reviewer should identify any further concerns, and propose response criteria to be applied during subsequent reviews (see Appendix 1). The reviewer should clearly state the relevance of the concern to the GRA and, where appropriate, identify the significance of the concern to estimates of future radiological impact.

The Reviewer should recommend one or more of the following options, where the GRA or a supplementary Technical Review Criterion has not been adequately fulfilled, or where a further concern has been raised (see Appendix 1):

- **Request further information from BNFL to explain and/or support BNFL's position.**
- **Make suggestions for further more detailed review of the issue.** The reviewer should provide adequate justification for any recommendation. This justification should include highlighting the importance of particular decisions, assumptions and/or data that may affect the safety case. For such issues, reviewers should indicate the level of detail that needs to be examined, and suggest appropriate detailed criteria against which to assess BNFL's responses and any subsequent submissions. Such further detailed review may involve examination of the documents cited directly in support of the original submission. This review will not examine documents more than one level of reference beneath the original submissions. Where a reviewer's concern cannot be satisfied at the first level of reference, a request will be made that BNFL provide further information and explicitly include it in the PCSC.
- **Make suggestions for further quantitative assessment or for other further work,** by BNFL or the Agency, including for example, review by the Agency of BNFL's site characterisation and interpretation programmes and/or quality audits of BNFL's work programme. The reviewer should provide adequate justification for any recommendation. Further guidance to reviewers on assessing the need for additional quantitative assessment is contained in "Recommendations for Additional Quantitative Assessment: Guidance for Reviewers". (Environment Agency 1997).

The Reviewer should present the results of each individual document review in a Review Report, and submit the Review Report to the Lead Reviewer. The first part of these reports will discuss the document being reviewed in light of the General Review Guidance set out in Section 3.1. The second part will address the relevant sections of the GRA, any relevant supplementary Technical Review Criteria, and any further concerns, and will comprise completed Issue Resolution Forms, as set out in Appendix 1. Reviewers should aim their review outputs at the technically competent, rather than the expert. The format of reports should conform with the Agency's style, using this report as an example.

The following headings form a structure for the Review Reports.

Part 1 (see also Section 3.1)

- Title of the reviewed document and reference number.
- Document Presentation.

- Technical Quality.
- Implications for the PCSC.
- References.

Each of the main sections of Part 1 will include pointers to the appropriate Issue Resolution Forms contained in Part 2.

Part 2 (see also Appendix 1)

This section will comprise completed Issue Resolution Forms documenting:

- The evaluation against the relevant sections of the GRA and any supplementary Technical Review Criteria.
- Any further concerns.
- Any requirement for more detailed reviews of particular issues.
- Any need for further quantitative assessment or other work.
- Response criteria.

Evaluate responses from BNFL to issues raised, when requested to do so by the Lead Reviewer.

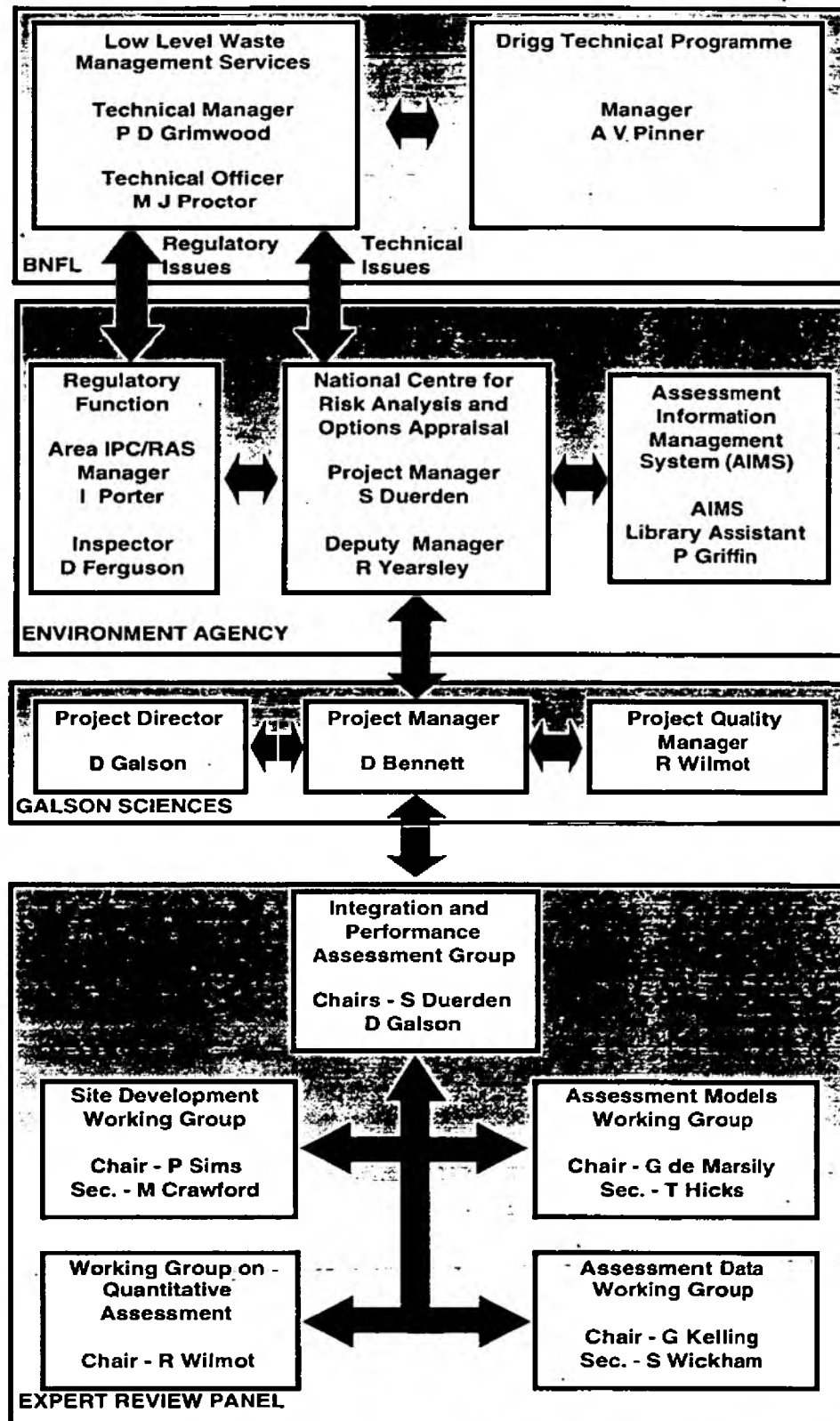


Figure 2.1 Project structure diagram showing the principal routes of information flow.

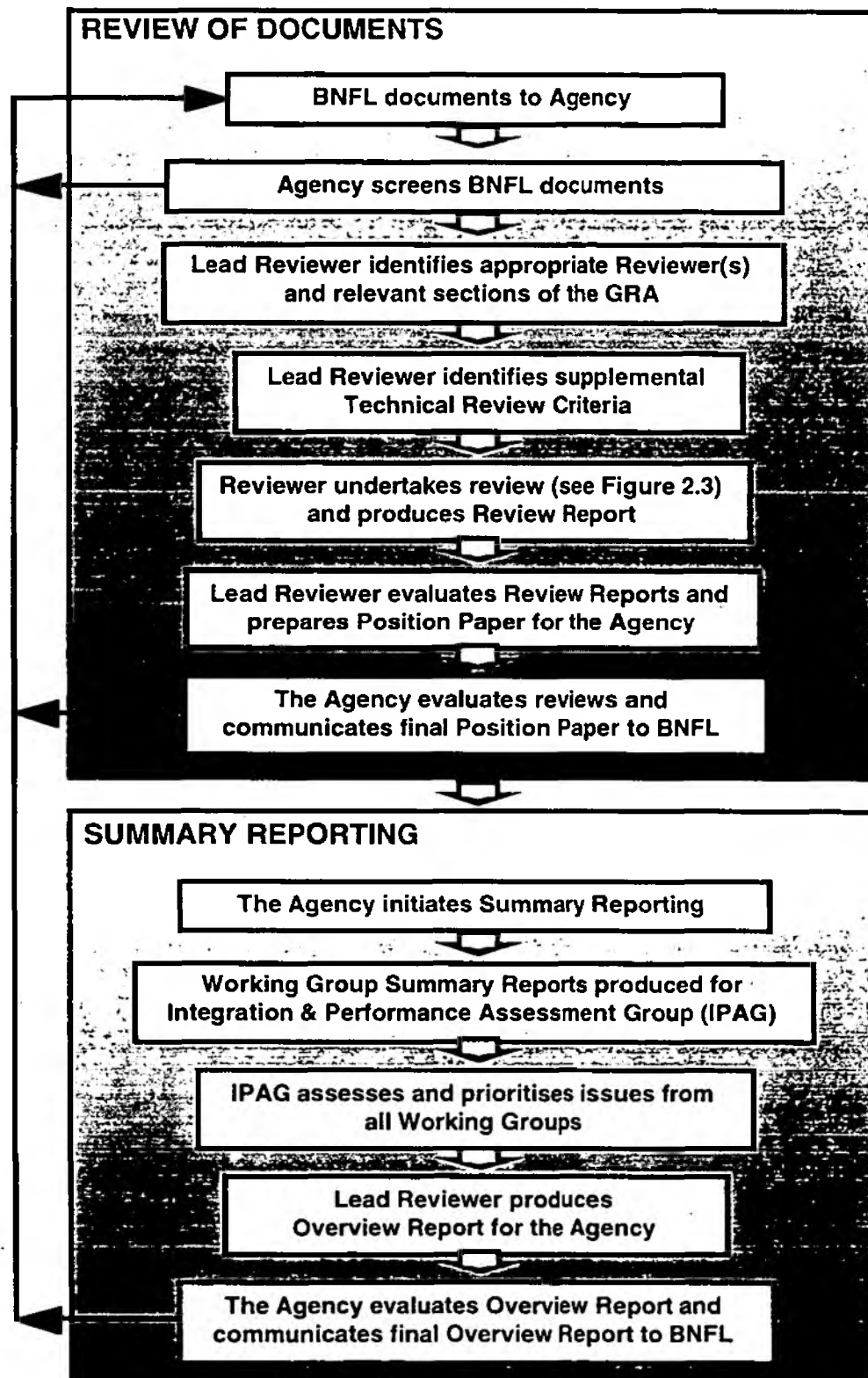


Figure 2.2 Project methodology diagram showing plans for document reviews and summary reporting.

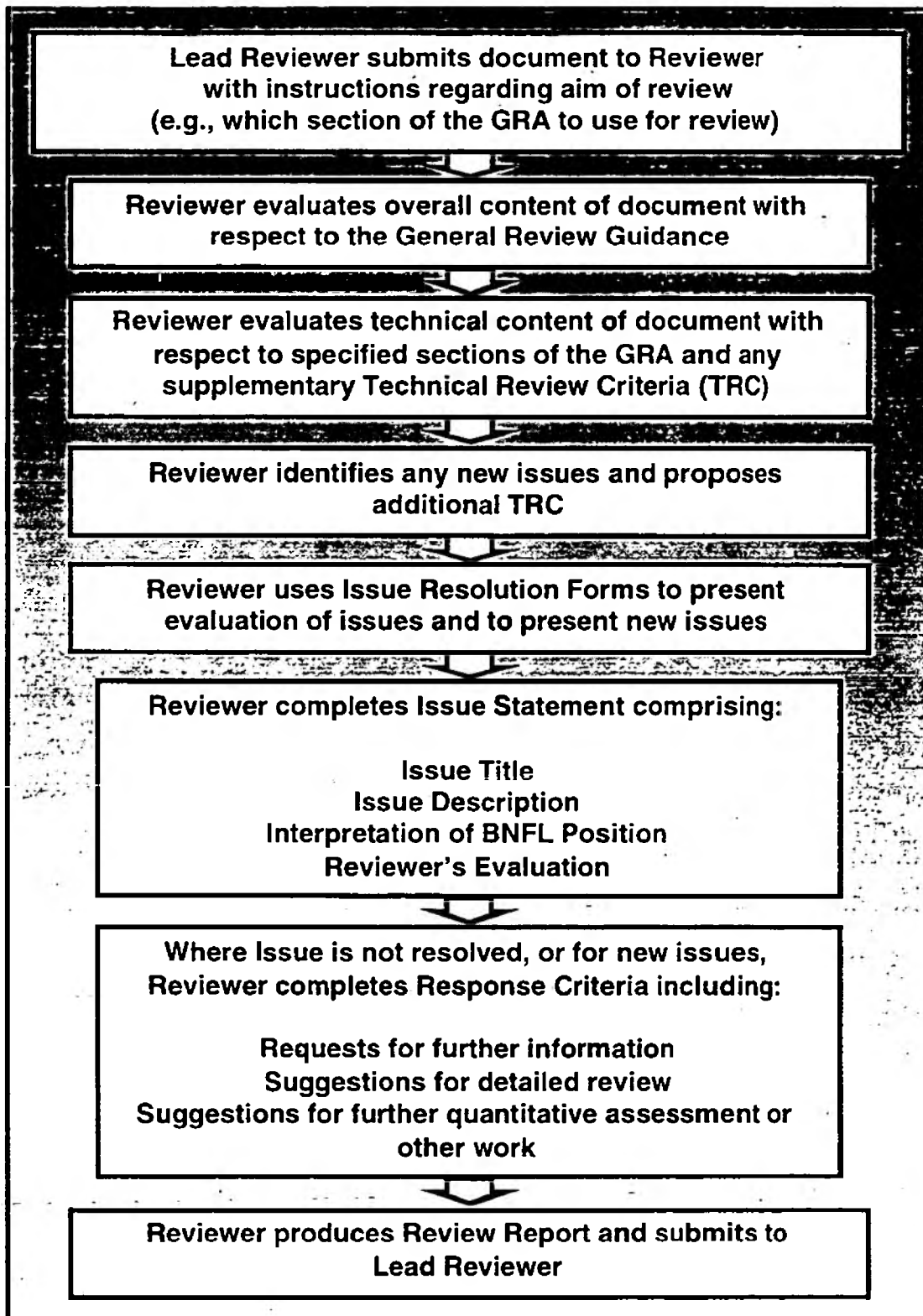


Figure 2.3 Steps in the review of documents.

3. REVIEW GUIDANCE

The principal requirements against which the Drigg PCSC will be assessed are contained in the GRA (Environment Agency *et al.* 1997).

Work in the project-initiation phase led to development of a site-specific list of review criteria to supplement the requirements contained in the GRA. Development of supplementary criteria has been necessary for two main reasons:

- To place appropriate emphasis in the review on issues relevant to Drigg authorisation.
- To help evaluate whether the requirements contained in the GRA have been met. It may be difficult to make the necessary evaluation against the GRA from individual draft documents submitted as part of the PCSC Development Programme. The development and application of review criteria at a greater level of detail will help in evaluating the adequacy of BNFL's treatment of the relevant parts of the GRA.

General Review Guidance is provided in Section 3.1 and an initial set of supplementary Technical Review Criteria (TRC) are provided in Section 3.2. The general guidance provides the basis for reviewing the overall presentation, technical quality, and adequacy of documents. The supplementary Technical Review Criteria, combined with the requirements in the GRA, represent an initial set of criteria for this review phase. However, reviewers should prepare additional detailed review criteria where they are of the opinion that such criteria would benefit the assessment.

3.1 General Review Guidance

The following guidance is intended to assist reviewers in undertaking and presenting reviews of documents from the PCSC Development Programme. Its use will provide a common structure to the first part of each Review Report (see Section 2.2.3). Section headings and points to be considered are indicated below. Reviewers should consider as many of these points as are appropriate to the document under consideration.

Document Presentation

- Overall Presentation
- Structure of document (i.e., logical ordering and presentation).
 - Breadth of content (i.e., coverage of expected parts of the safety case).
 - Depth of content (i.e., level at which each part is addressed).
 - Quality control of document production (e.g., sign-off, missing parts, references, typographical errors, legibility of figures, adequacy of Executive Summary).
- Referencing
- Sufficiency of cross-referencing to relevant supporting material.
 - Availability of references, particularly for key arguments.

Technical Quality

- Technical Quality
- Clarity of presentation of judgements, assumptions and data.
 - Validity of judgements, assumptions and data.
 - Evidence of quality control of data collection and interpretation.
- Model Development
- Clarity of presentation of model development process.
 - Fitness-for-purpose of models.
 - Evidence of quality control of models and codes.

Implications for the PCSC

- Data Sufficiency
- Sufficiency of data to support a safety case.
- Gaps in R&D
- Significant gaps in BNFL's research and assessment programme.
- Overall Approach
- Appropriateness of approach for assessing post-closure safety.

3.2 Technical Review Criteria

The GRA forms the main technical focus of the review. However, as noted above, the Agency has developed an initial list of supplementary Technical Review Criteria (TRC), based mainly on the reviews of previous assessments conducted in the project-initiation phase (see Section 2.1.1). At this early stage in the review, gaps in the list of TRC simply indicate areas that did not receive particular comment during the project-initiation phase review. Further such supplementary criteria will be developed as appropriate during the review of the PCSC Development Programme.

Because of the structure of the GRA, the TRC can be mapped across Chapters 4-8 of the GRA. For the purpose of ease of reference, the TRC are identified below by means of a key paragraph to which they relate in Chapter 6 or 7 of the GRA, followed by a sequential, lower-case alphabetical identifier, e.g., TRC 7.6(a). One or more cross-references to Chapter 8 of the GRA are also included at the end of the description, e.g. [see also GRA 8.8]. *The cross references are not intended to be comprehensive but are indicative of inter-relationships within the GRA.*

The TRC are presented in the form of expectations that the Agency has of the PCSC. As mentioned above, the list of TRC will be augmented as appropriate as the review proceeds.

- TRC 6.4(a) Justify assumptions in the post-closure safety case concerning the ability of proposed post-closure management plans and institutional controls to reduce the risk of inadvertent human intrusion, including assumptions concerning the duration and likely effectiveness of these plans and controls. [see also GRA 8.25]

- TRC 6.18(a) Analyse systematically the features, events and processes (FEPs) that may influence the site, including results from scoping calculations for extreme events and for processes not otherwise considered. [see also GRA 8.21]
- TRC 7.6(a) Present sufficient data to define the extent of spatial variability, and the associated uncertainty, of the following characteristics of the site and its surroundings: lithology, stratigraphy, geochemistry, hydrogeology, and resource potential. [see also GRA 8.8, 8.15 and 8.17]
- TRC 7.6(b) Justify the treatment of the variably unsaturated hydrogeological conditions at the site and the approach taken in representing the potential effects of climate change on hydrogeology. [see also GRA 8.8 and 8.9]
- TRC 7.7(a) Use site observations, appropriate chemical models, and an internally-consistent thermodynamic database to analyse radionuclide speciation and solubility for the different chemical environments that will exist in the facility. Consider the potential influence of biological and radiolytic effects on chemical environments and materials in the facility. [see also GRA 8.18]
- TRC 7.7(b) Provide quantitative justification to support the inclusion of radionuclide retardation processes in the post-closure risk assessment based on experimental data collected using site-specific materials over a range of different spatial scales (laboratory and field measurements). Detail the interpretation of such measurements using mechanistic models to support any subsequent model simplifications and/or data derivation for use in the risk assessment. [see also GRA 8.18]
- TRC 7.7(c) Evaluate the occurrence of natural colloids at the site and assess their potential influence on radionuclide mobility. [see also GRA 8.8 and 8.18]
- TRC 7.7(d) Evaluate the relevant concentration and dispersion processes in the biosphere and make an appropriate treatment of the geosphere/biosphere interface. [see also GRA 8.19]
- TRC 7.7(e) Evaluate the effects of natural and anthropogenic climate change on human activities and consequent site performance for all release pathways (e.g. groundwater abstraction, human intrusion, gas migration). [see also GRA 8.25]
- TRC 7.8(a) Justify assumptions made concerning groundwater abstraction locations, volumes and depths. [see also GRA 8.25]
- TRC 7.8(b) Evaluate the possible modes of human and biotic intrusion and the potential long-term effects of intrusion on releases via other pathways. [see also GRA 8.25]

- TRC 7.12(a) Assess the influence of the engineered barriers and features (including the waste grout, the waste container materials, the engineered clay, the leachate drains, the cement-bentonite cut-off wall, and the final site cap) on processes affecting radionuclide releases, such as human and biotic intrusion, erosion, gas migration, and infiltration. [see also GRA 8.10]
- TRC 7.12(b) Evaluate the effects of pre-closure facility degradation on the initial conditions for the post-closure safety case. [see also GRA 8.26]
- TRC 7.13(a) Analyse potential long-term doses from ^{14}C and ^{222}Rn in light of site capping plans and gas generation estimates. [see also GRA 8.10, 8.13 and 8.18]
- TRC 7.17(a) Present the inventory used in calculations of post-closure performance and the assumptions on which it is based. [see also GRA 8.11 and 8.13]
- TRC 7.18(a) Justify any assumptions on homogeneity of waste within the repository and on redistribution of material subsequent to an intrusion event, or consider non-homogeneous initial waste loading (and subsequent redistribution), and its possible influences on doses resulting from direct intrusion and on chemical environments within the vaults and trenches. [see also GRA 8.10 and 8.25]
- TRC 7.18(b) Evaluate the possible occurrence of waste- and facility-derived colloids at the site and assess their potential influence on radionuclide mobility. [see also GRA 8.10 and 8.13]

4. REFERENCES

Environment Agency (1996) *Guidance for the Production of R&D Outputs* (Version 1.2). Bristol: Environment Agency.

Environment Agency, Scottish Environmental Protection Agency, and Department of the Environment for Northern Ireland (1997) *Radioactive Substances Act 1993 - Disposal Facilities on Land for Low and Intermediate Level Radioactive Wastes: Guidance on Requirements for Authorisation*. Bristol: Environment Agency.

Environment Agency (1997) *Recommendations for Additional Quantitative Assessment: Guidance for Reviewers*. National Centre for Risk Analysis and Options Appraisal, Guidance Note 2. (in preparation). [Currently available as Galson Sciences Limited Document 9510-5, Version 1.0.]

APPENDIX 1 PROCEDURE FOR USE OF AN ISSUE RESOLUTION FORM

A1.1 Purpose and Scope

The Agency has developed an Issue Resolution Form to assist with documenting and resolving concerns that arise in review of BNFL documents from the PCSC Development Programme. This Form will be used by the Agency and BNFL to provide a traceable record of:

- The Agency's evaluation of BNFL documents against the requirements in the GRA and any supplementary Technical Review Criteria (TRC) developed by the Agency.
- The development of response criteria where concerns arise.
- BNFL's responses to issues raised in the Agency's review.

This Appendix provides guidance on the intended use of this form. The Lead Reviewer will use a similar approach to providing a traceable record of reviewers' comments, requests for additional information and recommendations.

Information from completed forms will be used as the basis for entries to the Agency's Issues Database.

A1.2 Issue Resolution Form

An example Issue Resolution Form is attached to this Appendix.

When the Agency receives documents from BNFL and determines that review would be constructive, the documents will be passed to the Lead Reviewer and appropriate reviewers will be asked to evaluate the documents against specific sections of the GRA and supplementary TRC. A separate Issue Resolution Form will be used to document the Agency's evaluation for each section of the GRA and each supplementary TRC under consideration.

Each Issue Resolution Form will include a unique Environment Agency reference number; a space is also provided for BNFL to assign their own reference number if required.

Brief descriptions of the other sections of the Issue Resolution Form are provided below:

- The **Issue Title** is a two or three word summary description of the issue for easy reference, e.g., Climate Change.
- The **Issue Description** will contain text from the GRA or a supplementary TRC. An initial set of TRC is presented in this document. Additional TRC will be developed in the

course of the review. Spaces are provided on the form for reference as appropriate to the GRA or the TRC to ensure traceability.

- **Interpretation of the BNFL Position.** This summarises the Agency's understanding of BNFL's position on the issue as far as is possible from the document under review. The summary will help to provide a basis to the evaluation of BNFL's documents and allow BNFL to ensure that the Agency's understanding of BNFL's position corresponds with the actual position.
- **Evaluation of BNFL's Position.** This section will present the Agency's evaluation of BNFL's position against the requirements of the GRA or supplementary TRC. Where the Agency consider that BNFL has fulfilled the requirements, the Issue Resolution Form will be provided to BNFL for information and no further action will be required. Where the Agency's evaluation of BNFL's position indicates a deficiency, this section will include a description of the concern.
- **Proposed Response Criteria.** This section will describe the type of response that would satisfy the Agency as a resolution of the issue. The level of detail required will be appropriate to the issue concerned.
- **Signature** of the form by the Agency at this point will indicate approval of Issue Statements, Evaluations, and Response Criteria.
- **Response.** This section of the Issue Response Form is for BNFL's use. Except when a point of clarification or other brief response is appropriate, this space should be used for a summary of the response. Detailed material supporting the response (technical notes, calculation results, etc.) should be referenced and attached. BNFL are requested to supply electronic versions of responses where this is possible, but an approved hard copy must always be supplied. Responses should take account of the proposed response criteria. Where these criteria cannot be met, the response should include a justification of the approach adopted.
- **Signature** of the form by BNFL at this point will indicate approval of the response.
- **Assessment of Response.** The Agency will assess the response provided by BNFL, using the requirements in the GRA, supplementary Technical Review Criteria, and the Response Criteria. Where the Agency is satisfied with the response, the **Issue Resolved** box will be checked. The issue will also be treated as resolved if the Agency consider and indicate to BNFL that further correspondence would not be constructive. If further evaluation is considered constructive, the Agency will check the **Issue Unresolved** box. In this case, a new Issue Resolution Form will be produced, including new TRC where appropriate.

- **Signature** of the form by the Agency at this point will indicate approval of the decision regarding Issue Resolution.
- The final section of the Issue Resolution Form provides the Agency with a record of **dates** of transmittal and receipt.

Drigg Review Issue Resolution Form			
Environment Agency Ref:		BNFL Ref:	
Document Reviewed			
Title:			
Authors:			
Date:			
Version or Draft:			
BNFL Report No.:			
Section, Page Nos.:			
Issue Statement ¹			
Section of the GRA considered in review:			
Supplementary Technical Review Criteria:			
Issue Title:			
Issue Description:			
Interpretation of BNFL Position:			

Evaluation of BNFL's Position ¹			
Proposed Response Criteria ¹			
Approved by:			
Signature:			Date:

Response¹

Example

Response approved by:

Signature:

Date:

Assessment of Response¹			
Example			
Issue Resolved:		Issue Unresolved:	
Resolution approved by:			
Signature:		Date:	
Dates (Agency use only)			
Issue sent to BNFL:		Response received from BNFL:	

1. Continue on separate sheet if required.