



**The decision on the application to
carry out a decommissioning project
at Calder Hall Power Station
under the Nuclear Reactors
(Environmental Impact
Assessment for Decommissioning)
Regulations 1999**

A report prepared by HM Nuclear Installations Inspectorate
on behalf of the Health and Safety Executive

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FOREWORD

This document reports on the Health and Safety Executive's decision to grant consent for a decommissioning project at Calder Hall Nuclear Power Station to the licensee, British Nuclear Group Sellafield Ltd, under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999. Calder Hall is the third nuclear power station at which consent has been granted for a decommissioning project, the first two being Hinkley Point A and Bradwell.

The process of considering potential environmental impacts has involved extensive public consultation, and there has been a great deal of interest shown by national bodies and local groups alike. I believe that the process has been open and inclusive and I sincerely thank everyone who has been involved in this important work, especially those who took the time to send comments on the documentation provided by the licensee.

All of us, and particularly the local population, have a keen and vested interest in the effectiveness of controlling environmental impacts during the decommissioning of the Calder Hall Nuclear Power Station. We have attached conditions to the Consent to require the licensee to provide us with a copy of its environmental management plan and its subsequent revisions. Importantly, there is also a requirement for the licensee to keep the public informed on progress on a regular basis through making their environmental management plans available for public inspection. Experience so far (at Hinkley Point A and Bradwell) has shown that this is proving an effective means of managing the environmental impacts.

During our decision-making process we have strived to be open and transparent. Openness and transparency will continue to be a key factor in managing environmental impacts throughout the coming decades of this decommissioning project. I hope that you will find this report helpful and that it gives you a clear understanding of the basis for our decision.

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SUMMARY

European Council Directive 85/337/EEC[1], as amended by Council Directive 97/11/EC[2], sets out a framework on the assessment of the effects of certain public and private projects on the environment. The Directive is implemented in Great Britain for decommissioning nuclear reactor projects by the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (EIADR)[3].

The intention of the Directive and Regulations is to involve the public through consultation in considering the potential environmental impacts of a decommissioning project, and to make the decision-making process on granting consent open and transparent.

The Regulations require the licensee to undertake an environmental impact assessment, prepare an environmental statement that summarises the environmental effects of the project, and apply to the Health and Safety Executive (HSE) for consent to carry out a decommissioning project. There is an optional stage where the licensee may request from HSE an opinion on what the environmental statement should contain (called a pre-application opinion).

The licensee of Calder Hall Power Station, British Nuclear Group Sellafield Ltd (BNGSL), previously British Nuclear Fuels plc (BNFL), requested a pre-application opinion and provided information in a scoping report in October 2003. HSE undertook a public consultation on the scoping report and provided its pre-application opinion in February 2004. The licensee applied to HSE for consent to carry out a decommissioning project and provided an environmental statement in August 2004. HSE undertook a public consultation on the environmental statement. Both public consultations involved around 70 organisations. Following the consultation on the environmental statement, HSE requested evidence to verify information in the environmental statement, regarding certain aspects of the assessment. Having considered this evidence, HSE was able to make a decision to grant consent to carry out a decommissioning project at Calder Hall Power Station under the Regulations in June 2005, and attached conditions to the Consent.

HSE took relevant factors into account when reaching its decision to grant consent. In brief, these were: the adequacy of the information provided in the environmental statement and evidence; the conclusion that environmental benefits would far outweigh detriments; the prediction that there would be no significant effects on the environment of other countries; and the recognition that some issues would be adequately covered elsewhere, such as through other regulatory regimes.

The conditions attached to the Consent relate to mitigation measures to prevent, reduce and, if possible, offset adverse environmental effects of the project. In brief, BNGSL must prepare an environmental management plan that identifies mitigation measures, reports on implementation and effectiveness of mitigation measures, and reports on changes to mitigation measures and reasons for changes in light of experience. HSE must be notified in advance of any significant change to a mitigation measure to control any major adverse effects on the environment. A copy of the environmental management plan and its subsequent revisions must be sent to HSE and made available to the public.

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INTRODUCTION

1. European Council Directive 85/337/EEC[1], as amended by Council Directive 97/11/EC[2], sets out a framework on the assessment of the effects of certain public and private projects on the environment. It is known as the Environmental Impact Assessment (EIA) Directive.
2. The EIA Directive is implemented in Great Britain for development projects relevant to the nuclear industry by the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (TCPR99)[4] and the Environmental Impact Assessment (Scotland) Regulations 1999[5]. These Regulations include developments such as installations for the processing and storage of radioactive waste. The competent authorities for these Regulations are the relevant local planning authorities.
3. The EIA Directive is implemented in Great Britain for decommissioning nuclear reactor projects by the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (EIADR)[3]. These Regulations cover the dismantling or decommissioning of nuclear power stations and other nuclear reactors. The competent authority for EIADR is the Health and Safety Executive (HSE).
4. The licensee of Calder Hall Power Station, British Nuclear Group Sellafield Ltd (referred to in this document as BNGSL), previously British Nuclear Fuels plc, applied to HSE for consent to carry out a decommissioning project under EIADR in August 2004.
5. This document reports on HSE's decision to grant consent for a decommissioning project at Calder Hall Power Station. It describes the content of the conditions attached to the Consent, the main reasons and considerations for the decision, and a description of the main measures that BNGSL will take to control any major adverse effects of the decommissioning project on the environment.

BACKGROUND

Legislative framework for nuclear safety

Nuclear Installations Act 1965

6. The Health and Safety at Work etc Act 1974 (HSWA74)[6] is primarily a statute for securing, amongst other things, the health and safety of persons at work and protecting others against the risks to their health and safety in connection with the activities of persons at work. HSWA74 places duties on employers and employees, establishes the Health and Safety Commission and HSE, and provides for health and safety regulations. HSWA74 also provides for the appointment of inspectors and defines the powers available to them. There are also provisions relating to the disclosure of information and to offences. In relation to nuclear installations, it incorporates the licensing parts of the Nuclear Installations Act 1965 (NIA65)[7] as relevant statutory provisions.
7. NIA65 is the main piece of legislation used to regulate the safety of nuclear installations. It was amended in 1974 when HSE was created to allow for,

amongst other things, the substitution of HSE as the licensing authority. Under NIA65, no site may be used for the purpose of installing or operating any nuclear reactor or prescribed nuclear installation unless a nuclear site licence has been granted to a corporate body by HSE and is for the time being in force.

8. Under NIA65, HSE may at any time attach to a licence such conditions as appear necessary or desirable in the interests of safety, or fit with respect to the handling, treatment and disposal of nuclear matter. These conditions give HSE powers to directly regulate the licensees' activities using consents, approvals, directions, specifications, agreements and notifications. In addition, the goal setting nature of the licence conditions requires each licensee to develop compliance arrangements which best suit its business needs provided they demonstrate that safety is being managed adequately.

Other legislation dealing with nuclear and radiological hazards

9. A range of other legislation dealing with nuclear and radiological hazards applies to nuclear licensed sites in addition to NIA65. Radiological protection under routine and emergency situations are regulated under the Ionising Radiations Regulations 1999 (IRR99)[8] and Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPPIR)[9], respectively, and enforced by HSE. Radioactive discharges are regulated under the Radioactive Substances Act 1993 (RSA93)[10] and enforced by the Environment Agency (EA) in England and Wales, and Scottish Environmental Protection Agency (SEPA) in Scotland.

Effects of decommissioning on other countries

10. Decommissioning is one of the activities for which the European Commission requires a submission by governments of Member States under Article 37 of the Euratom Treaty. The submission identifies the potential impacts on Member State countries of the decommissioning strategy of a particular nuclear installation.
11. EIADR contain arrangements for consultation with other States party to the Agreement on the European Economic Area (EEA) if a decommissioning project is likely to have significant environmental effects on those States (see paragraph 23); EIADR do not require a submission to the European Commission.

Regulators and others working together

12. Regulators and others work together on matters of mutual interest, and in particular, there are administrative arrangements between HSE and EA, SEPA and the Food Standards Agency (FSA). When considering discharge authorisations, for example, EA and SEPA consult HSE and FSA, and FSA undertakes monitoring of terrestrial and aquatic food.
13. Regulators and others also work together in other areas. The lead on the submission under Article 37 of the Euratom Treaty, for example, is with the Department for Environment, Food and Rural Affairs for nuclear installations in England and Wales, and with the Scottish Executive for nuclear installations in Scotland. The submission is prepared by EA or SEPA, as appropriate, in consultation with HSE and FSA. The Nuclear Decommissioning Authority (NDA) has the responsibility for the liabilities

arising from past and future government civil nuclear programmes¹ and HSE liaises with NDA on issues of mutual interest regarding the decommissioning of reactors.

Legislative process under EIADR

Application for consent to carry out a decommissioning project

14. The intention of the EIA Directive and EIADR is to involve the public through consultation in considering the potential environmental impacts of a decommissioning project, and to make the decision-making process on granting consent open and transparent.
15. EIADR came into force in November 1999. Since then, any licensee wishing to begin to decommission a nuclear power station or other nuclear reactor (as defined) must apply for consent to carry out a decommissioning project under EIADR, undertake an environmental impact assessment and prepare an environmental statement that summarises the environmental effects of the project.
16. When planning to undertake an environmental impact assessment and prepare an environmental statement, there is an optional stage where the licensee may request from HSE an opinion on what the environmental statement should contain (called a pre-application opinion). In such a case, the licensee must provide information (such as in the format of a scoping report) on which HSE may base its opinion.
17. When preparing its opinion, HSE must consult and take into account the views of the consultation bodies identified in EIADR, which are the local planning authority, local highway authority, any principal council for the area (if it is not the local planning authority), and a range of environmental organisations and agencies, namely: the Countryside Agency (formerly the Countryside Commission), English Nature (formerly the Nature Conservancy Council for England) and EA in England; Countryside Council for Wales and EA in Wales; and Scottish Natural Heritage and SEPA in Scotland. HSE may also consult and take into account the views of other organisations.
18. The environmental statement must provide the information in Schedule 1 to EIADR that is reasonably required and which the licensee can reasonably compile. In brief, the environmental statement should contain a description of the following: the project (including aspects such as physical characteristics and expected emissions); main alternatives (options) studied by the licensee; aspects of the environment likely to be significantly affected (such as water and air); likely effects on the environment (such as short-, medium- and long-term effects and cumulative effects); and measures envisaged to prevent, reduce and where possible offset any significant adverse environmental effects. The environmental statement must also contain a non-technical summary of the information provided.

Public consultation on an environmental statement

19. Once the licensee has undertaken an environmental impact assessment, applied for consent and provided an environmental statement, a public

¹ Arising from installations formally owned by BNFL and UKAEA

consultation must be carried out on the environmental statement. This public consultation is broader than that on the scoping report. It not only includes the consultation bodies and other organisations that HSE may wish to consult, but also local people since the licensee must publicise the environmental statement in at least one newspaper local to the site, make copies of the environmental statement available for public inspection at one or more locations near the site, and invite people to write to HSE with their views.

Public consultation on further information

20. If HSE is of the opinion that further information is necessary before it can make its decision, then HSE may ask the licensee for further information. In such a case, public consultation is carried out on the further information under arrangements similar to those for the public consultation on the environmental statement.

Evidence to verify information in the environmental statement

21. HSE may ask the licensee to produce evidence to verify any information in the environmental statement. Evidence is not subject to public consultation.

Change or extension to a decommissioning project

22. If there is a change or extension to any decommissioning project that may have significant adverse environmental effects, the licensee must apply to HSE for a determination as to whether the change or extension should be subjected to an environmental impact assessment. This requirement is relevant irrespective of whether the decommissioning project began after or before EIADR came into force (that is, whether consent for the project was granted under EIADR, or whether the project began before November 1999 when such consent was not required). If HSE decides that such an assessment is necessary, then the licensee must apply for consent to carry out that change or extension to the decommissioning project and provide an environmental statement on that change or extension to support the application. A public consultation must be carried out on that environmental statement.

Effects of decommissioning on other countries

23. EIADR contain arrangements for consultation with other States party to the Agreement on the EEA if a decommissioning project is likely to have significant environmental effects on those States. The consultation is through the Secretary of State with the lead for the EIA Directive. These arrangements apply to both new decommissioning projects and to changes or extensions to existing projects requiring environmental impact assessment.

Granting consent and attaching conditions

24. At the end of the public consultation on the environmental statement (including any evidence requested) and further information (if requested), HSE must take into account the views of consultees and, if appropriate, responses from EEA States, when making its decision on whether or not to grant consent for a decommissioning project under regulation 8(3) of EIADR. If HSE decides to grant consent, HSE may attach conditions as may appear to it to be necessary or desirable in the interests of limiting the impact of that project on the environment under regulation 8(4) of EIADR.

Transparency of HSE's decision on an application

25. At the end of the process when HSE has made its decision on whether or not to grant consent for a new decommissioning project or a change or extension to an existing project, HSE must: inform the licensee and the Secretary of State of the decision under regulation 11(a); inform the public by publishing a notice in a local newspaper under regulation 11(b); and make available a statement (a report) for public inspection under regulation 11(c) of EIADR. This report must contain: the content of HSE's decision and, if consent is granted, the content of any conditions attached to that consent; the main reasons and considerations on which the decision is based; and a description, where necessary, of the main measures that the licensee will take to avoid, reduce and, if possible, offset any major adverse effects of the decommissioning project on the environment.

APPLICATION TO CARRY OUT A DECOMMISSIONING PROJECT

The consultation process

Request for a pre-application opinion

26. BNGSL wrote to HSE in October 2003 to request a pre-application opinion on what the environmental statement for Calder Hall Power Station should contain. BNGSL provided information in the format of a scoping report. HSE consulted the consultation bodies and other organisations that it wished to consult (including all members of the Local Community Liaison Committee (LCLC)) on that report during October 2003 to January 2004. HSE's pre-application opinion was sent to BNGSL in February 2004. The pre-application opinion was copied to consultees in February 2004, namely, the consultation bodies and other organisations that were consulted by HSE (including individual members of the LCLC who provided comments). The pre-application opinion was made available on HSE's web site, and a copy is appended as Annex 1. Appendix 2 to Annex 1 lists the consultees who responded on the scoping report and who were content for their names to be made publicly available. Copies of the scoping report, pre-application opinion and responses to the consultation (where consultees were content for their responses to be made publicly available) can be inspected at public libraries close to site, HSE's Library and Information Centre (see Appendices 7 and 8 to Annex 1).

Public consultation on the environmental statement

27. BNGSL wrote to HSE to apply for consent to carry out a decommissioning project at Calder Hall Power Station and provided an environmental statement in August 2004. HSE consulted the same bodies and organisations on the environmental statement that were involved in the consultation on the scoping report. In addition, BNGSL publicised the environmental statement in the local press (News and Star, North West Evening Mail, Times and Star, and the Whitehaven News) to involve local people. HSE publicised the consultation on the environmental statement on its web site, which had a direct link to BNGSL's web site. BNGSL made copies available for public inspection at four locations near the site, and HSE made copies available at the library of its office nearest to the site (Preston, Appendix 7 to Annex 1),

public libraries close to the site (Appendix 8 to Annex 1) and HSE Information Centre (Bootle, Appendix 7 to Annex 1).

28. The public consultation period ended in December 2004. The consultees who were contacted by HSE are listed in Annex 2. The consultees who responded and were content for their comments to be made publicly available are listed in Annex 3. Copies of these responses were sent to BNGSL, and copies can be inspected at Public libraries close to site, HSE's Library and Information Centres (see Appendices 7 and 8 to Annex 1).

Request for evidence to verify information within the environmental statement

29. HSE was of the opinion that evidence to verify information in the environmental statement was necessary. HSE wrote to BNGSL in April 2005 to request evidence relating to the assessment of effects and mitigation measures for potential disturbance of contaminated land at Calder Hall due to the decommissioning project. A copy of this letter is appended as Annex 4. BNGSL's response was received in May 2005. The request for evidence is discussed in Annex 5.
30. HSE was of the opinion that further information was not necessary before it could make its decision. Annex 6 provides an explanation as to why further information was not requested for specific topics.
31. Copies of the environmental statement, responses to the consultation and evidence, will be available for public inspection at public libraries close to the site, HSE's Library and Information Centre (see Appendices 7 and 8 to Annex 1) for a period of 1 year from the date of the Consent that was granted by HSE (that is, until June 2006)

Organisations involved in the consultation process

32. HSE considered the environmental statement (including evidence) for Calder Hall Power Station. HSE's consideration included holding discussions with Calder Hall Power Station's site inspectors (from HSE (HM Nuclear Installations Inspectorate - NII) and EA), local planning authorities and independent consultants contracted to HSE, as well as taking into account written comments received during the public consultations.
33. The organisations and agencies with expertise in planning and environmental matters (the consultation bodies) assessed the environmental statement as appropriate, and HSE took account of the findings of their assessments.
34. HSE also took account of the views of the other organisations it consulted and which provided comments (see Annex 3). These organisations had expertise, knowledge or interest in nuclear, planning and environmental matters, and included: Government departments, agencies and bodies (such as the Department of Trade and Industry (DTI), Food Standards Agency and National Radiological Protection Board); and local groups (such as the LCLC).

Topics raised by consultees on the environmental statement – an overview

35. Some consultees provided comments on topics that were relevant to the environmental impact assessment process under EIADR and for which sufficient evidence was not presented in the environmental statement. These topics were pursued through HSE's request for evidence

36. Some consultees also provided comments on topics that were relevant to the decommissioning process but which did not necessarily require detailed consideration under the environmental impact assessment process under EIADR. For example, some topics were covered by related health, safety and environment legislation where compliance with that legislation would ensure that environmental impacts would be minimal. Other topics were the subject of wider government policy on decommissioning. These topics were not pursued for the purposes of further information or evidence.
37. Some of the responses contained information that was of importance or interest to other organisations, and these responses were copied to those organisations for information (where consultees were content for their comments to be made publicly available).
38. Some responses indicated a desire for continued involvement in discussions regarding various aspects of the decommissioning project. The licensee has undertaken to continue discussions with relevant stakeholders on issues about which those stakeholders have specific concerns.
39. Some of the responses commented that the environmental statement was well written and comprehensive. A number of other comments highlighted areas where improvements in the format might be made.

Request for evidence – including topics raised by consultees

40. HSE requested evidence to verify information in the environmental statement regarding topics associated with the assessment of effects and mitigation measures for potential disturbance of contaminated land at Calder Hall due to the decommissioning project. Some of these topics were raised by some of the consultees. All of these topics had been dealt with to some degree in the environmental statement, but HSE's view was that evidence was required to verify the information provided and conclusions made.
41. Full details of the request for evidence are included in HSE's letter to BNGSL that is appended as Annex 4. A brief explanation of why HSE considered that this evidence was necessary is provided in Annex 5.

Topics not pursued for evidence or further information – topics raised by consultees

42. Consultees raised a number of topics that were relevant to the decommissioning process but which did not necessarily require detailed consideration under the environmental impact assessment process under EIADR. Consultees also raised a number of topics that HSE considered had been dealt with reasonably in the environmental statement, when the very long timescale of the project and resulting uncertainties are taken into account. Consequently, HSE decided not to pursue such topics for the purposes of further information, and an overview of the main topics raised is given below (see paragraphs 43 to 49).
43. An area of concern for some consultees related to the effects (both direct and indirect) of reduction in workforce at Calder Hall. The environmental statement described the assessed effects and discussed mitigation measures that will be implemented and which may reduce the magnitude of some of these. However, the statement recognises that the potential for mitigation measures provided by BNGSL is limited by the predicted trend of reducing

employment levels at the wider Sellafield site over the next few years. The statement noted that it is expected that additional mitigation will result from the wider regeneration initiatives currently being undertaken in West Cumbria

44. An area of concern for some consultees was the timetable for decommissioning, where they expressed the view that site clearance should be undertaken much earlier. The environmental statement presented options for decommissioning that resulted in different timetables for decommissioning and then described and justified the option selected. The environmental impacts considered did not change the overall outcome of the option selection process. In addition, decommissioning timetables are closely linked with Government policy which has recently been reviewed (see paragraphs 69 to 75). It is for these reasons that the timetable for decommissioning was not pursued for the purposes of further information.
45. Some consultees expressed concern regarding information on waste treatment and disposal (including radioactive waste). The environmental statement provided information on wastes and potential radioactive emissions (including indicative figures), but noted that authorised discharges will continue to be made under RSA93 and regulated by EA.
46. Another area of concern was what would happen if no national repository became available in the future. If this were the case, there would be a change or extension to the decommissioning project. If this may have significant adverse environmental effects, then BNGSL may need to undertake an environmental impact assessment and apply for consent to carry out that change or extension under EIADR.
47. A number of consultees expressed concern over arrangements for security during the decommissioning project and the possibility of terrorist acts targeted at the site. Terrorism is the responsibility of the Office of Civil Nuclear Security in DTI and the 2-mile air exclusion zone around the site is the responsibility of the Civil Aviation Authority (CAA). NIA65 covers other possible incidents and accidents and associated emergency arrangements, including evacuation.
48. The other main topics raised by consultees had, in HSE's view, either been adequately covered in the environmental statement, or would be adequately regulated and enforced under town and country planning legislation or related health, safety and environment legislation, such that environmental impacts would be minimal.
49. A summary of the key topics raised by consultees which were relevant to the decommissioning process but which were not pursued for the purposes of further information are listed in Annex 6 with a brief explanation of why HSE took this view.

REASONS FOR GRANTING CONSENT

Decision to grant consent

50. HSE granted consent to carry out a decommissioning project at Calder Hall Power Station under EIADR in June 2005, and attached conditions to the Consent; a copy of the Consent and conditions is appended as Annex 7.

51. HSE took relevant factors into account when reaching its decision to grant consent. In brief, these were as follows.
- a. HSE's view of the adequacy of the information provided in the environmental statement and evidence.
 - b. HSE's conclusion that environmental benefits would far outweigh detriments.
 - c. HSE's acceptance of the licensee's prediction that there would be no significant effects on the environment of other countries.
 - d. HSE's recognition that some issues would be adequately covered elsewhere. These issues were: town and country planning matters; compliance with health, safety and environment legislation; and decommissioning timetables relating to government policy.

Information provided

52. In HSE's view, the environmental statement and evidence provided all the information that was reasonably required and that BNGSL could reasonably compile. The issues of importance in the early parts of the project were dealt with in some detail, whereas issues of relevance to the latter parts of the project were of necessity dealt with in terms of broad outlines, and this is reasonable given the long duration of the project.
53. The environmental statement described a flexible approach to decommissioning where necessary, by providing information on a range of potential approaches for a particular issue. This gave confidence that BNGSL had not foreclosed unnecessarily, at this early stage, possible appropriate approaches to the decommissioning process. In such cases, BNGSL used "worst case" impacts in assessments, providing assurance that, whichever approach is adopted, any potential impacts are likely to be less than those determined by the assessment.

Environmental benefits and detriments and consideration of measures to control adverse environmental effects (mitigation measures)

54. In HSE's view, the environmental statement (including evidence) showed that the predicted environmental benefits overall far outweighed any adverse environmental effects of the decommissioning project. The environmental statement summarised all the environmental impacts of the decommissioning project, describing their magnitude in terms of major, moderate, slight or negligible impacts, and their significance in terms of key significant, significant or not significant. The non-technical summary of the environmental statement summarised the key significant impacts.
55. A summary of the benefits and detriments of the environmental impacts identified by BNGSL is given in Annex 8. There was only one area (ecology) where two potentially *key significant adverse impacts* were identified. These were long-term environmental effects with major impacts and related to the effects of demolition work on any bats present in buildings to be demolished. However, appropriate mitigation measures have been identified in the environmental statement, which will render the effects not significant. The licensee has undertaken to implement these measures. Two long-term key significant benefits of moderate impact were identified in the landscape and

visual assessment. These relate to the removal of cooling towers and other structures from the skyline.

56. There were seven areas where *significant adverse impacts* were identified. These were socio-economic factors, landscape and visual, ecology, surface quality and drainage, geology hydrogeology and soils, traffic and transport, and noise and vibration. These effects varied in magnitude and duration (see Annex 8). With the exception of the socio-economic topic area, appropriate mitigation measures have been identified in the assessment to render any long-term effects not significant. The long-term, adverse impacts in the socio-economic topic area relate to employment levels at the site and in the surrounding area. Of these impacts, one was identified as major, four as moderate and one as minor. The mitigation measures identified in the environmental statement may reduce the magnitude of three of these and it is expected that additional mitigation will result from the wider regeneration initiatives currently being undertaken in West Cumbria
57. Three topic areas showed *long-term, positive impacts* of varying magnitude. These were landscape and visual, surface water quality and drainage and traffic and transport.
58. Impacts relating to air quality and climatic factors were insignificant and the scoping exercise indicated that the potential for archaeological remains on site is negligible and thus a full assessment of impacts was not required, although it was recommended that the Royal Commission on Historical Monuments in England (RCHME) carry out a level 1 survey before decommissioning commences. In addition, the licensee has undertaken to consider appropriate means of retaining the heritage interest associated with the design, layout, technology and operation of the power station itself and to discuss this with English Heritage
59. Further details on environmental effects and measures to control environmental effects are provided in Annex 8

Effects on other countries

60. The environmental statement predicted that the only area that may have adverse environmental impacts of international importance was ecology. Two impacts were assessed as being potentially key significant, major and long-term (the effects on bats if any buildings to be demolished contain roosts / hibernacula) and two as potentially significant, minor and short-term (the effects on Salmon qualifying species of the River Ehen from release of contaminants into the River Calder and resulting reduction in the water quality of the River Calder and its confluence with the River Ehen). However, the environmental statement has identified appropriate mitigation measures, which will render the impacts not significant. The licensee has undertaken to implement these measures. Therefore, based upon the information provided in the environmental statement, HSE is of the opinion that the assessed impacts of the project would not be likely to have significant effects on the environment in another EEA State.

Issues covered elsewhere – town and country planning

61. The environmental statement described the proposals for a number of new facilities and conversion of existing buildings on the site. These include the

installation of a retrieval facility to be installed over the control rod storage building, the conversion of existing buildings into a LLW management facility, upgrading of some buildings for continued use, provision of a contractor compound area, and construction of a short link road. Where necessary, these will be regulated under the Town and Country Planning Act (TCPA90)[11] and enforced by the relevant local planning authorities. HSE will be consulted on any associated applications for planning permissions by the relevant local planning authorities. Temporary installations to process radioactive waste might also require environmental impact assessment under TCPR99 if they fulfill the criteria in Schedule 2 (that is, if building footprints exceed a specified area, or if the need for a new or a change to an existing authorisation under RSA93 is identified). In such cases where environmental impact assessment is required (under TCPR99), the public will also be consulted before any decision is made.

62. Another area where permissions may be necessary is for any in-fill materials that are used and have to be brought onto the site. This will be regulated under TCPA90 and associated legislation and enforced by the relevant local planning authorities.
63. It follows, therefore, that BNGSL can begin work on all parts of the decommissioning project so long as the work undertaken does not require additional permissions under town and country planning legislation.
64. HSE and the local planning authorities have had and will continue to have discussions on the interface between EIADR, NIA65, TCPR99 and other town and country planning legislation, as necessary.

Issues covered elsewhere – health, safety and environment legislation

65. The environmental statement (including evidence) described links to related health, safety and environment legislation. This included legislation covering: occupational health and safety; nuclear safety; radioactive contamination and discharges; and treatment of non-radioactive contamination and wastes (involving materials such as asbestos).
66. HSE is satisfied that control of such health, safety and environment matters is achieved and will continue to be achieved through regulation and enforcement of existing legislation. Compliance with relevant legislation should ensure that adverse environmental impacts would be minimal. The majority of the legislation is enforced by HSE and EA, and there are administrative arrangements in place between HSE and EA on working together on matters of mutual interest (see paragraphs 12 and 13).
67. It follows, therefore, that BNGSL can begin work on all parts of the decommissioning project so long as the work undertaken does not require additional permissions under related health, safety and environment legislation.
68. HSE and EA have had and will continue to have discussions on the interface between EIADR, NIA65, RSA93 and other health, safety and environment legislation, as necessary.

Issues covered elsewhere – decommissioning timetables: The relation of government policy, quinquennial review process (QQR) and European initiatives to EIADR and the Calder Hall environmental statement

Government Policy

69. Government policy on decommissioning the UK's nuclear facilities was previously summarised in paragraphs 120 to 131 of the White Paper "Review of Radioactive Waste Management Policy: Final Conclusions" (CM2919)[12]. The document stated that decommissioning should be undertaken as soon as is reasonably practicable, taking account of all relevant factors. All nuclear operators should draw up strategies for decommissioning redundant plant and include justification of the timetables proposed.
70. In November 2003, the government published a consultation document on the proposal to update and revise its nuclear decommissioning policy. Following consultation, a revised government policy statement "The Decommissioning of the UK Nuclear Industry's Facilities"[13] was published September 2004, and replaces the previous statement contained in paragraphs 120 to 131 of Cm2919.
71. The revised decommissioning policy covers all (existing and new) UK nuclear industry facilities. This includes power stations, other reactors, research facilities, fuel fabrication and reprocessing plants and laboratories on sites licensed under NIA 65. Each nuclear operator is expected to produce and maintain a decommissioning strategy and plans for the site, including its future use.
72. The Government White Paper, "Managing the Nuclear Legacy – A Strategy for Action" (Cm 5552)[14] was published in July 2002, and subsequently the Nuclear Decommissioning Authority (NDA) was established by the Energy Act 2004 [15], to take responsibility for the liabilities arising from past and future government civil nuclear programmes. The NDA is responsible for setting agreed decommissioning timetables for these programmes (in consultation with both the regulators and the licensees), and ensuring that the licensees carry out programmes effectively.

QQR

73. An environmental statement under EIADR needs to describe the options for decommissioning, including decommissioning timetables. Information about licensee's decommissioning timetables is also provided by the Quinquennial review (QQR) process; to ensure that operators' decommissioning strategies remain soundly based as circumstances change, HSE was requested (as per the requirements of Cm2919) to review these strategies every 5 years in consultation with EA or SEPA. The revised government decommissioning policy indicates that, except where equivalent arrangements are put in place (eg by the NDA), strategies should continue to be subject to regular periodic reviews, at least every five years, by HSE in consultation with the environment agencies. EIADR would only play an important role if environmental impacts were affected by those timetables.
74. BNGSL's decommissioning strategy was sent to HSE in April 2000, and HSE published its QQR in February 2002. In this review, NII identified issues,

which it considered BNGSL should address. These included: the principles of sustainable development; intergenerational equity; justification of the timetable proposed; why a shorter timescale for deferral is not reasonably practicable; and engaging a wide range of its external stakeholders in dialogue on each of the original decommissioning options to inform itself as to the acceptability of the scoring and weighting decisions.

75. It is possible that decommissioning timetables might change in the future, perhaps in response to the QQR process or activities of the future NDA. An environmental statement should, therefore, clarify whether it is technically feasible to accommodate timetable changes. If such a change to a decommissioning timetable resulted in a change to a decommissioning project, which may have significant adverse environmental effects, then the requirements of regulation 13 would apply.

European Commission initiatives

76. Regulations implementing Council Directive 2001/42/EC [16] on the assessment of the effects of certain plans and programmes on the environment (known as the Strategic Environmental Assessment (SEA) Directive) came into force 21 July 2004[17]. The purposes of the SEA and EIA Directives are related in that both deal with environmental assessment, but the SEA Directive deals with strategic plans and programmes whereas the EIA Directive deals with specific projects (such as under EIADR).

Calder Hall environmental statement

77. The environmental statement described options for decommissioning, including the safestore strategy and options for decommissioning timetables. A range of environmental impacts (including non-radioactive wastes, waste minimisation, noise, transport and visual impacts) was considered during the process to develop the decommissioning strategy. (This was a smaller range than was considered in the environmental impact assessment under EIADR.) Consideration of the environmental impacts did not change the overall outcome of the strategy selection process.
78. The environmental statement stated that the duration of the works phase, care and maintenance period, and site clearance phase, was around 10, 85 to 105, and 12 years, respectively. It is possible that the decommissioning timetable might change in the future, perhaps in response to the QQR process, implementation of the SEA Directive or activities of the future NDA. Such a change might result in, for example, a reduction in the care and maintenance period. There are no technical reasons why such a reduction could not take place since the environmental statement explained that it is technically feasible to dismantle plant, including the reactors, at any time throughout the care and maintenance period.
79. However, it should be noted that if a change to the decommissioning timetable resulted in a change to the decommissioning project that may have significant adverse environmental effects, then BNGSL must apply to HSE for a determination as to whether the change should be subjected to an environmental impact assessment. If so, BNGSL would have to apply for consent to carry out that change to the decommissioning project, and prepare an environmental statement on that change for public consultation under EIADR.

CONDITIONS ATTACHED TO THE CONSENT

Content of the conditions

80. HSE has attached conditions to the Consent. A copy of the Consent and conditions is appended as Annex 7. In brief, BNGSL must prepare and implement an environmental management plan that identifies mitigation measures, describes the implementation and effectiveness of mitigation measures, and describes changes to mitigation measures and reasons for changes in light of experience. A copy of the environmental management plan and its subsequent revisions must be sent to HSE and made available to the public. HSE must also be notified in advance of any significant changes to mitigation measures to prevent, reduce and where possible offset any major adverse effects on the environment.
81. Regulation 16 of EIADR provides HSE with sufficient powers under HSWA74 to effectively enforce these conditions.
82. A copy of the environmental management plan will be made available for public inspection at public libraries close to the site, HSE's Library and Information Centre (see Appendices 7 and 8 to Annex 1), and the plan will be replaced by subsequent revisions as these are provided.

Reasons for the conditions

83. In order to successfully control environmental impacts, mitigation measures will be necessary in a number of areas. This is why HSE attached conditions to the Consent that cover mitigation measures.

Condition 1

84. Condition 1 requires BNGSL to start the decommissioning project within 5 years of consent being granted. The project is dismantling or decommissioning work on the power station to which EIADR relate.

Condition 2

85. Condition 2 requires BNGSL to prepare an environmental management plan to describe mitigation measures necessary to prevent, reduce and where possible offset any significant adverse effects on the environment. The plan must be implemented, and dismantling or decommissioning work can only be carried out in accordance with the plan.

Condition 3

86. Condition 3 requires the environmental management plan to be prepared within 90 days of the date of the Consent. The plan must cover the mitigation measures for the work activities to be carried out. There are essentially three types of work activities, which are as follows.
- a. Work activities with associated mitigation measures (as identified in the environmental statement and supporting evidence).
 - b. Future work activities with a range of options for implementation with associated mitigation measures.
 - c. Future work activities that have not yet been assessed for the need for mitigation measures due to future uncertainties.

87. Most of the work activities have associated mitigation measures in the environmental statement (including evidence), such as measures to control noise and vibration impacts during demolition. Condition 3a requires these mitigation measures to be listed in the environmental management plan.
88. Some future work activities have a range of options for implementation, such as options for the management of radioactive contaminated ground. In such cases, the options have associated mitigation measures in the environmental statement (including evidence), and when the option is chosen in the future, the appropriate mitigation measures should be implemented. Condition 3b requires these work activities and the options for their implementation to be listed in the environmental management plan.
89. Some future work activities can only be assessed for the need for mitigation measures to control environmental impacts during the later stages of the decommissioning project, such as impacts on wildlife during construction of temporary buildings to facilitate site clearance. In such cases, mitigation measures to protect wildlife would be dependent on the wildlife present at that future time. Condition 3c requires these work activities to be listed in environmental management plan. Although the need for mitigation measures for such work activities cannot yet be assessed, it seems likely that measures would be similar to those for similar work activities during the earlier stages of the project.

Condition 4

90. As the project progresses, condition 4 requires the environmental management plan to be updated. Where options for implementation of work activities have been selected from the list of work activities and options compiled under condition 3b, condition 4a requires these selected options and associated mitigation measures to be included in the plan, along with reasons for their selection.
91. Where the need for mitigation measures to control environmental impacts during the later stages of the decommissioning project have been assessed from the list of work activities compiled under condition 3c, condition 4b requires these mitigation measures to be included in the environmental management plan, along with reasons for their selection.
92. Condition 4c requires the environmental management plan to describe the effectiveness of mitigation measures over time. Condition 4d requires the plan to describe significant changes to mitigation measures in light of experience, along with reasons for those changes. The plan will be, therefore, a living document that will be periodically reviewed and revised throughout the whole of the decommissioning project.

Condition 5

93. Condition 5 requires BNGSL to send the environmental management plan and its subsequent revisions to HSE periodically. The timeframe for sending the plan to HSE is on an annual basis, or such longer period of time as HSE may agree. In the first part of the works phase it is likely that this timetable will be followed, but as experience is gained and effectiveness of mitigation measures demonstrated, the period of time between subsequent documents may well increase. During the care and maintenance period, this period of

time is likely to be much longer, perhaps every 5 to 10 years. Timeframes for the site clearance phase are likely to be similar to those for the works phase.

94. Condition 5 also requires BNGSL to make copies of the environmental management plan available to the public. This is to keep the local population informed on progress with mitigation measures.

Condition 6

95. Condition 6 requires BNGSL to give HSE advance warning of any significant changes to mitigation measures to control major adverse effects on the environment. Although few such effects were described in the environmental statement, mitigation measures might not work as predicted, and changes to mitigation measures might become necessary to control major adverse environmental effects in the future.

REFERENCES

1. Council Directive 85/337/EEC: O J No. L 175, 05/07/1985, Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment
2. Council Directive 97/11/EC: O J No. L 73, 14/03/1997, Council Directive 97/11/EC of 3 March 1997 amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment
3. Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999, SI 1999 No. 2892; HMSO 1999, ISBN 0-11-085395-4
4. Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999, SI 1999 No. 293; HMSO 1999, ISBN 0-11-080474-0
5. Environmental Impact Assessment (Scotland) Regulations 1999, SI 1999 No 1, as amended by the Environmental Impact Assessment (Scotland) Regulations 2002, SI 2002 No. 324; HMSO 1999, ISBN 0-11-059107-0
6. Health and Safety at Work etc Act 1974, HMSO 1974, ISBN 0-10-543774-3
7. Nuclear Installations Act 1965, as amended S.I. 1974/2056 and S.I. 1990/1918, HMSO 1978, ISBN 0-11-801107-3
8. Ionising Radiations Regulations 1999, SI No. 3232, HMSO 1999, ISBN 0-11-0856147
9. Radiation (Emergency Preparedness and Public Information) Regulations 2001, SI No. 2975, HMSO 2001, ISBN 0-11-029908-6
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11. Town and Country Planning Act 1990, HMSO 1990, ISBN 0-10-540890-5
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13. 'THE DECOMMISSIONING OF THE UK NUCLEAR INDUSTRY'S FACILITIES'; DTI/Pub 7574/0.2k/09/04/NP. URN 04/1598
14. Department of Trade and Industry, *Managing the Nuclear Legacy – A Strategy for Action*, Cm 5552, HMSO 2002, ISBN 0-10-155522-9
15. Energy Act 2004, HMSO 2004, ISBN 0-10-542004-2
16. Directive 2001/42/EC of the European Parliament and of the Council on the assessments of certain plans and programmes on the environment
17. The Environmental Assessment of Plans and Programmes Regulations 2004, SI No. 1633, HMSO 2004, ISBN 0-11-049455-5

GLOSSARY OF TERMS AND ABBREVIATIONS

BPEO	Best Practicable Environmental Option
BNGSL	British Nuclear Group Sellafield Ltd, previously British Nuclear Fuels plc (BNFL)
CAA	Civil Aviation Authority
DTI	Department of Trade and Industry
EA	Environment Agency
EEA	European Economic Area
EIA	Environmental Impact Assessment
EIADR	Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999
Euratom Treaty	Treaty establishing the European Atomic Energy Community
FSA	Food Standards Agency
HSE	Health and Safety Executive
HSWA74	Health and Safety at Work etc Act 1974
ILW	Intermediate level waste – waste with radioactivity levels exceeding the upper boundaries for low level waste (waste containing radioactive materials other than those acceptable for disposal with ordinary refuse, but not exceeding 4GBq/te of alpha or 12GBq/te of beta/gamma activity), but which does not require heating to be taken into account in the design of storage or disposal facilities
IRR99	Ionising Radiations Regulations 1999
LCLC	Local Community Liaison Committee
Licensee	Holder of a nuclear site license
MADA	Multi-Attribute Decision Analysis
NDA	Nuclear Decommissioning Authority – formerly known as the LMA (Liabilities Management Authority) – referred to in the Government White Paper, “Managing the Nuclear Legacy – A Strategy for Action” (Cm 5552, published July 2002)
NIA65	Nuclear Installations Act 1965, as amended
NII	Her Majesty’s Nuclear Installations Inspectorate – part of HSE

QQR	Quinquennial review – reviews of nuclear operators’ decommissioning strategies carried out every 5 years by HSE (NII) in consultation with EA and SEPA, as appropriate – referred to in the Government White Paper, “Review of Radioactive Waste Management Policy: Final Conclusions” (Cm 2919, published July 1995)
REPPIR	Radiation (Emergency Preparedness and Public Information) Regulations 2001
RSA93	Radioactive Substances Act 1993
Safestore	Preservation of reactor buildings, their contents, and other structures on the site to facilitate an extended delay period before dismantling
SEA	Strategic Environmental Assessment
SEPA	Scottish Environmental Protection Agency
TCPA90	Town and Country Planning Act 1990
TCPR99	Town and Country Planning (Environmental Impact Assessment for Decommissioning) (England and Wales) Regulations 1999

Annex 1

NUCLEAR REACTORS (ENVIRONMENTAL IMPACT ASSESSMENT FOR DECOMMISSIONING) REGULATIONS 1999

The Executive's pre-application opinion as to the content of the environmental statement for Calder Hall Nuclear Power Station

Issue

- 1) To state the Executive's pre-application opinion as to the content of the environmental statement for Calder Hall Nuclear Power Station under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (EIADR).

Background

- 2) EIADR implements the requirement for an environmental impact assessment for decommissioning nuclear power stations and nuclear reactors arising from Council Directive 85/337/EEC (as amended by Council Directive 97/11/EC) on the assessment of the effects of certain public and private projects on the environment.
- 3) Before decommissioning or dismantling of a nuclear reactor or power station can take place, a licensee must apply to the Health and Safety Executive (HSE, referred to as the Executive in EIADR) for consent, undertake an environmental impact assessment and provide an environmental statement. The information to be included in an environmental statement is referred to and specified in Schedule 1 to EIADR.
- 4) The nuclear site licensee, British Nuclear Fuels plc (BNFL), has asked HSE to provide a pre-application opinion under regulation 6 of EIADR as to the content of the environmental statement for Calder Hall Nuclear Power Station. This is an optional precursor to the licensee providing an environmental statement under regulation 5 of EIADR.
- 5) The licensee has provided a scoping report to inform the pre-application opinion entitled "Calder Hall Nuclear Power Station Pre-Application Opinion Report". The scoping report identifies a range of issues and considers these in the context of the proposed scope of the environmental statement.

- 6) The procedure for a pre-application opinion is similar to that for the scoping opinion provided by the local authority under regulation 10 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999.
- 7) BNFL has chosen to provide a detailed document as its submission for a pre-application opinion. This, therefore, includes material that will form part of the environmental statement and preliminary analyses of the environmental impact of the project. Some of these preliminary analyses indicate that the project will have negligible effects on certain aspects of the environment. HSE has considered this information, taking into account the comments of consultees, and in some instances is of the opinion that BNFL has done sufficient work on such aspects. In these cases, listed in Appendix 4, HSE is of the opinion that no additional information or assessment beyond that provided in the scoping report is needed in the environmental statement. In other instances, although BNFL has indicated that it believes the environmental impact will be negligible, HSE's view is that the evidence presented is not sufficient to justify this opinion and therefore these topics will need to be addressed further in the environmental statement.
- 8) The environmental statement for Calder Hall Nuclear Power Station, when submitted to HSE, should address such of the information specified in Schedule 1 Part I to EIADR which is reasonably required to assess the environmental effects of the proposed project. In addition, the environmental statement must address all the information specified in Schedule 1 Part II to EIADR. If, on receiving the information, HSE's opinion is that such information is not sufficient, then EIADR gives HSE the power to require the licensee to provide further information.

Consultation

- 9) HSE has consulted the consultation bodies specified in regulation 2 of EIADR on the scoping report provided by BNFL. In addition, HSE has consulted other bodies it considered appropriate, other bodies nominated by consultees, and other persons who asked to be involved in the consultation process. HSE requested consultees with detailed local knowledge and experience located near to the station to include matters of local concern. The list of consultees is at Appendix 1. All statutory consultees and some non-statutory consultees responded to the consultation process. The list of respondents is given in Appendix 2.
- 10) Consultees were generally content with the breadth of the proposed scope and provided detailed points on the issues presented by the licensee. A number of other issues not explicit within the proposed scope were also highlighted by consultees for consideration.

11) The responses received by HSE have been considered and incorporated, as appropriate, into HSE's opinion. Responses have been copied in full to BNFL only with the agreement of consultees.

HSE's opinion as to the content of the environmental statement

Proposed scope and general content

12) The licensee's scoping report provides an overview of the issues to be addressed in the environmental statement:

- a) Air quality and climatic factors;
- b) Archaeology and cultural heritage;
- c) Ecology;
- d) Geology, hydrogeology and soils;
- e) Landscape and visual;
- f) Noise and vibration;
- g) Socio-economic;
- h) Surface water quality and drainage; and
- i) Traffic and transport;

13) The licensee should take into account the requirements of the regulations and HSE's expectations, in regard to the general content of the environmental statement, as described in Appendix 3. HSE recognises that BNFL has addressed the majority of these issues within the scoping report.

14) In addition, consideration should be given to the issues raised and comments made in Appendices 4 to 6. These are discussed further below.

Issues which do not need to be considered further in the environmental statement

15) It is HSE's opinion, based upon the information provided in the scoping report and the responses from consultees, that the licensee has adequately addressed

the topics listed in Appendix 4 and justified why the environmental statement does not need to contain additional information or assessment beyond that provided in the scoping report.

Detailed points on issues within the scoping report – to be addressed in the environmental statement

16) Based upon its own analysis of the information provided in the scoping report and comments from consultees, it is HSE's opinion that the licensee should address certain detailed points on aspects discussed within the scoping report in the environmental statement itself. These points are listed at Appendix 5.

Points on other matters – whose consideration could be of benefit to the environmental statement

17) A number of other points are listed at Appendix 6. HSE suggests that, although not specifically required, their consideration could be of benefit to the environmental statement.

Presentation

18) This opinion will be copied for information to all consultees listed at Appendix 1. The opinion, together with copies of consultees' comments will be displayed at HSE libraries and information centres listed in Appendix 7 and the public libraries listed in Appendix 8. Alternatively, the opinion is available on the internet at <http://www.hse.gov.uk/nsd/index.htm#consultations>

Implications

19) The licensee may wish to provide flexibility within the environmental statement to deal with future operational or other changes, which may be reasonably anticipated at the time of application for consent.

20) HSE will consult on the environmental statement for Calder Hall Nuclear Power Station when this is provided by the licensee in due course under EIADR.

Contact

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Consultees on the scoping report

Consultation bodies

HSE consulted 11 individuals in 6 organisations

Copeland Borough Council
Countryside Agency
Cumbria County Council
English Nature
Environment Agency
Lake District National Park Authority

Other organisations

HSE consulted 52 individuals in 46 organisations

Allerdale Borough Council
Associated British Ports
Barrow in Furness Borough Council
British Ports Association
British Trust for Ornithology
Campaign for Nuclear Disarmament
Centre for Environment, Fisheries & Aquaculture Science (CEFAS)
Country Landowners Association
Crown Estate
Cumbria Ambulance Service NHS Trust
Cumbria & Lancashire Strategic Health Authority
Cumbria Constabulary
Cumbria Wildlife Trust
Cumbrians Opposed to Radioactive Environment (CORE)
Defence Estates
Department of Environment, Food and Rural Affairs
Direct Rail Services Ltd
Drigg and Carleton Parish Council

Dumfries & Galloway Council
Eden District Council
Eden Rivers Trust
English Heritage
Food Standards Agency
Friends of the Earth
Friends of the Lake District
Gosforth Parish Council
Greenpeace
Health Protection Agency
Highways Agency
Isle of Man Department of Local Government and Environment
Isle of Man Department of Agriculture Fisheries & Forestry
Lancashire County Council
National Farmers Union
National Radiological Protection Board (and COMARE)
National Trust
North West Regional Assembly
Nuclear Free Local Authorities
Nuclear Safety Advisory Committee (NuSAC)
Office of the Deputy Prime Minister
Ponsonby Parish Council
Ramblers Association
Republic of Ireland Department of the Environment and Local Government
Royal Society for the Protection of Birds
Royal Yachting Association
South Lakeland District Council
West Cumbria Primary Care Trust

Local Community Liaison Committee

HSE consulted 38 individuals in 25 organisations

Allerdale Borough Council
British Nuclear Fuels
Copeland Borough Council
Cumbria Constabulary

Cumbria County Council
Cumbria County Fire Service
Department of Environment Food and Rural Affairs
Drigg & Carleton Parish Council
Environment Agency
Food Standards Agency
Gosforth Parish Council
Government Office North West
Health Protection Agency
Isle of Man Department of Local Government and the Environment
Member of Parliament
National Farmers Union
Ponsonby Parish Council
St Bridget's Parish Council
St John's Beckermeth Parish Council
Seascale Parish Council
Sellafield
South/West Cumbria Health Authorities
United Utilities
West Cumbria Community Health Council
Whitehaven & District Trades Council

Consultees who responded on the scoping report

HSE received 21 responses on the scoping report from 21 organisations

Campaign for Nuclear Disarmament

Copeland Borough Council

Countryside Agency

Cumbria County Council

Cumbria & Lancashire Strategic Health Authority

English Heritage

English Nature

Environment Agency

Food Standards Agency

Friends of the Lake District

Gosforth Parish Council

Isle of Man Government

Lake District National Park Authority

Lancashire County Council

National Farmers Union

Nuclear Safety Advisory Committee

Ponsonby Parish Council

Republic of Ireland (Department of the Environment and Local Government)

Royal Society for the Protection of Birds

Royal Yachting Association

West Cumbria Primary Care Trust

General content of the environmental statement

- 1) This Appendix describes the general content of the environmental statement as required by EIADR, together with comments from HSE on its expectations in this regard. HSE recognises that the licensee has addressed the majority of these issues within the scoping report.

Description of the project

- 2) EIADR requires that the environmental statement includes a description of the project, including in particular:
 - A description of the physical characteristics of the whole project and the land-use requirements during the construction and operational phases;
 - A description of the main characteristics of the production processes, for instance the nature and quantity of the materials used; and
 - An estimate, by type and quantity, of expected residues and emissions.

(EIADR, Schedule 1, paragraphs 1 and 8)

This means the statement should provide a clear picture of the whole project, including:

- a) The works phase;
- b) The care and maintenance phase;
- c) The site clearance phase;
- d) Transport;
- e) Treatment of wastes.

Options and reasons for option chosen

- 3) EIADR requires that the environmental statement must include an outline of the main alternatives (or options) studied by the licensee, and an indication of the main reasons for the option chosen, taking into account the environmental effects (EIADR, Schedule 1, paragraphs 2 and 11). This means the statement should address options for the whole project, as listed in paragraph 2 above.

Description of likely effects on the environment

- 4) EIADR requires that the environmental statement should describe the likely effects of the proposed project on the environment, which should cover indirect, secondary, cumulative, short-, medium- and long-term, permanent and temporary, and positive and negative effects of the project on the environment (EIADR, Schedule 1, paragraph 4).

- 5) This means that the statement must cover the whole project through dismantling to site clearance, and address, amongst other things, accidental or untoward events. Furthermore, the nature and potential for adverse environmental effects arising from possible abnormal situations during the whole decommissioning period should be identified. While it may not be possible, at this stage, to be definitive about the later stages of decommissioning, the statement should cover the strategic intention for eventual completion of decommissioning and as much detail as possible on environmental effects. Where there is uncertainty in later stages, this must be indicated. Some more detailed aspects are described below.

Measures to control effects on the environment

- 6) The environmental statement must describe measures envisaged to avoid, reduce and, if possible, remedy significant adverse effects on the environment (EIADR, Schedule 1, paragraphs 5 and 9).

Radioactive emissions and wastes

- 7) The environmental statement should consider potential radioactive emissions and long-term storage of radioactive waste on the site (N.B. authorised discharges will continue to be made under the Radioactive Substances Act 1993). Other wastes should also be addressed, including asbestos, and other hazardous and non-hazardous wastes (EIADR, Schedule 1, paragraph 1).

Non-technical summary

- 8) The environmental statement should include a non-technical summary of the information provided (EIADR, Schedule 1, paragraphs 6 and 12).

Indication of any difficulties

- 9) The environmental statement should include an indication of any technical deficiencies or lack of know-how encountered in compiling the information (EIADR, Schedule 1, paragraph 7).

Issues which do not need to be considered further in the environmental statement

- 1) This Appendix lists the topics for which it is HSE's opinion that no additional information or assessment beyond that provided in the scoping report is needed in the environmental statement.
- 2) EIADR requires that the environmental statement must contain the data required to identify and assess the main effects which the project is likely to have on the environment. In particular, it should contain such of the information relating to the following, as is reasonably required to assess the environmental effects of the proposed project:
 - a) Population;
 - b) Fauna
 - c) Flora;
 - d) Soil;
 - e) Water;
 - f) Air;
 - g) Climatic factors;
 - h) Material assets (including architectural and archaeological heritage and landscape); and
 - i) The inter-relationship between the above factors (EIADR, Schedule 1, paragraphs 3 and 10).
- 3) In the scoping report, BNFL indicated that a number of aspects of the above topics would have a negligible affect on the environment. It is HSE's opinion, based upon the scoping report and the responses from consultees, that the licensee has adequately addressed the following topics and justified why no further information or assessment is required beyond that provided in the scoping report.

Air quality and climatic factors

- a) Impacts of climate change upon the site during decommissioning
- b) Acid gases or nuisance odours

Ecology

- a) Managed amenity grassland within the Calder Hall site

Geology, Hydrogeology and soils

- a) Geological sites of conservation value
- b) Existing groundwater supplies
- c) Area groundwater resource

Noise and vibration

- a) Potential impacts during care and maintenance (none identified)
- b) Traffic induced air borne vibration

Surface water quality and drainage

- a) Potential impacts during care and maintenance (none identified)
- b) Flooding risk
- c) Physical impacts on water courses (channel erosion)

Detailed points on issues within the scoping report – to be addressed in the environmental statement

- 1) As a result of its own analysis, together with comments from consultees, it is HSE's opinion that the licensee should consider the detailed points, listed below, on the issues within the scoping report. Some of these detailed points are not explicitly described but may be mentioned within the scoping report. HSE recognises that, in some cases, significant amounts of information have been provided in the scoping report, but considers that further information is still required on some aspects. The level of detail provided in the environmental statement regarding issues covered by other legislation (Paragraph 26 of this Appendix), should be consistent with that described in Paragraph 27 of this Appendix.

Air quality and climatic factors

- 2) Regarding baseline data used in the environmental impact assessment, consideration should be given to:
 - a) Providing further justification for use of meteorological data from Blackpool as a baseline, rather than data from a monitoring site adjacent to Sellafield;
 - b) Including information on how baseline data for hazardous substances has been obtained;
 - c) Including baseline data for ozone;
 - d) Including characterisation of emissions which contribute to global warming;
 - e) Including dates when data was recorded; and
 - f) Providing definitions for terms such as 'mean concentration' when used in the text.
- 3) The environmental impact assessment should include adequate consideration of the effects on air quality arising from discharges from waste plants and dust arising from demolition works.
- 4) Consideration should be given to the National Air Quality Standards timescales.
- 5) The scoping report identifies the possibility that fine dust particles will be dispersed over several kilometres. Consideration should be given to extending the assessment zone for dust emissions from decommissioning works beyond the 1 km zone around the site boundary.
- 6) Regarding monitoring of fugitive dusts, consideration should be given to:
 - a) Providing an indication as to whether dusts arising from decommissioning activities may contain radioactive material; and

- b) Including assessment of how fugitive dust emissions will be monitored away from site and what mitigation measures will be employed to minimise dust impact.

Archaeology and cultural heritage

- 7) Regarding survey of the site and surrounding area, consideration should be given to undertaking further consultation with appropriate bodies (such as English Heritage and the County Archaeologist) prior to completing the environmental impact assessment.
- 8) Regarding the historical value of the power station itself, consideration should be given to:
 - a) Undertaking further consultation with appropriate bodies such as English Heritage and the County Archaeologist; and
 - b) Considering the value of components (such as early control panels) as museum exhibits.

Ecology

- 9) Consideration should be given to the inclusion of the following areas in the environmental impact assessment:
 - a) Braystones Coast; and
 - b) Boggles wood;
- 10) Regarding surveys and baseline data collection, consideration should be given to:
 - a) Undertaking further field surveys during Spring / Summer periods to determine the extent of inhabitation of the study area by protected species such as bats, badgers, red squirrels, natterjack toads, other amphibians and reptiles (this list is not exhaustive);
 - b) Assessing patterns of breeding, wintering and passage of birds within the site itself and within 2km around the site boundary;
 - c) Assessing the number of bird species and density of these along the sections of the River Ehen, River Calder and Foreshore within the study area; and
 - d) Including the results of the environmental monitoring programme referred to in Appendix 8, Paragraph 18 of the scoping report.
- 11) Regarding watercourses in the study area, consideration should be given to:
 - a) Consulting English Nature regarding the implications of the Habitats Directive² in relation to the candidate Special Area of Conservation (cSAC) status of the

² European Communities Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC, amended by Directive 97/62/EC), commonly referred to as the Habitats Directive, implemented in Great Britain by The Conservation (Natural Habitats, & c) Regulations 1994,

River Ehen and if necessary, undertaking an assessment of the effects of the decommissioning programme on the cSAC. The assessment should be provided as an appendix to the environmental statement;

- b) Providing appropriate baseline data on the water quality and fishing status of the River Calder; and
- c) Assessing the impact of the decommissioning project on the River Calder.

12) Regarding the environmental effects of the decommissioning project on protected species identified within the study area, consideration should be given to:

- a) Giving an indication of how effects will be monitored; and
- b) Including information as to how mitigation of the effects will be addressed.

Geology, Hydrogeology and soils

13) Consideration should be given to

- a) Providing further detail as to groundwater quality;
- b) Including a tabular resumé of the groundwater information arising from monitoring (by Nirex and BNFL) referred to in Appendix 4 of the scoping report;
- c) Undertaking sampling for soil moisture deficit and including the results of this in the environmental statement;
- d) Assessing the need to remove existing foul and surface water drainage systems; once levels of contamination have been determined, the systems may be used to aid future drainage of the site;
- e) Assessing the potential impacts arising as a result of changes in recharge and groundwater levels, such as risk of flooding, mobilisation of existing groundwater contamination (including that associated with the removal of buildings from site) or wetland derogation. This list is not exhaustive; and
- f) Providing further evidence (for example the results of soil and groundwater sampling) to support the claim that there is not expected to be significant contamination of the ground or groundwater from operations at Calder Hall.

Landscape and visual

14) Consideration should be given to:

- a) Using interim landscaping to mitigate the environmental impact of the works over the decommissioning period;
- b) Including a description of potential changes to reactor height and re-cladding (temporary and permanent), together with an assessment of the related visual impacts; and
- c) Identifying the zone of visual influence (ZVI).

Noise and vibration

15) Consideration should be given to:

- a) Assessing the impacts from any potential blasting operations;
- b) Providing justification for the use of baseline data from 1989 to 1995; and
- c) Providing baseline data for on-site noise levels.

Socio-economic

16) Consideration should be given to:

- a) Assessing the impact of shift working on the local population;
- b) Assessing the impact of decommissioning on amenity facilities and land use;
- c) Assessing the impact of decommissioning on the local housing market, local services (such as education) and crime and disorder in the study area; and
- d) Assessing the effects of decommissioning on agriculture and farm businesses local to the Calder Hall site.

Surface water quality and drainage

17) Consideration should be given to:

- a) Assessing the impact of the decommissioning project on the water quality of the River Calder;
- b) Providing clarification regarding the stated baseline year of 2000;
- c) Amending the text to reflect the fact that radioactive surveillance programmes for aquatic and terrestrial foods is carried out in Scotland by the Scottish Environmental Protection Agency; and
- d) Including baseline data regarding thermal pollution.

Traffic and transport

18) Consideration should be given to:

- a) Assessing the impact of transport modes on towns and villages within the study area;
- b) Including the predicted time periods of altered traffic flows within the assessment; and
- c) Further assessing the options of road, water and / or rail transport.

Secondary developments

19) The environmental statement should provide a clear picture of the number and purpose of buildings and facilities required to be constructed during the project, together with a summary of the resulting environmental impacts and the need for permissions under Town and Country Planning legislation. Consideration should be given to:

- a) Providing indications of likely size, location, planning status and mitigation measures associated with the proposed waste management facility;
- b) Noting that processing of low level waste may reveal intermediate level waste and including the latter when considering designs for the waste management facility; and
- c) Providing a clear indication of any ancillary buildings or facilities which are likely to be required during the decommissioning project.

Radioactive discharges

20) Regarding radioactive discharge profiles, consideration should be given to:

- a) Displaying the expected local radioactive discharge levels for Calder Hall separately to the radioactive discharge levels for the Sellafield site plus Calder Hall as a whole;
- b) Providing indicative radioactive discharge data for the works phase;
- c) Indicating outline radioactive discharge profiles for the care and maintenance and the site clearance phases;
- d) Including clear definitions of the terms 'free release waste', 'low level waste' and 'intermediate level waste';
- e) Providing a summary of measures to prevent spillages or leaks of radioactive material into the environment, together with reference to the legislation which covers such matters;
- f) Taking into account the fact that some intermediate level waste will decay to become low level waste during the full period of the decommissioning project; and
- g) Assessing the effects of long-term storage of intermediate level waste on the Sellafield site (including a determination as to whether existing capacity of the Sellafield facility is adequate).

Treatment of wastes

21) Consideration should be given to:

- a) Including in the assessment, the potential for hazardous wastes to also be radioactive;
- b) Providing estimates of the quantities of hazardous wastes, and likely disposal routes;

- c) Providing information regarding the potential for recycling of waste materials;
- d) Summarising the processing of waste materials within the waste management facility; and
- e) Identifying potential discharges arising from waste treatment processes.

Mitigation measures

- 22) The environmental statement should include proposed mitigation measures (rather than possible mitigation measures).

Impact assessment criteria

- 23) The environmental statement should include explanations as to how impact assessment magnitude and significance have been determined for assessed impacts.

Baseline year

- 24) The environmental statement should provide justification for the choice of 2001 as the baseline year

Care and maintenance period

- 25) The environmental statement should include an indication of monitoring measures, which will be in place during the care and maintenance period.

Issues covered by other legislation

- 26) A number of issues are covered by existing legislation, and these will continue to be enforced under this legislation. These issues include:
- a) Continuity of site management;
 - b) Site security and integrity, including human and animal intrusion;
 - c) Fire safety, including safety of additional contractors housed in temporary accommodation, procedures for dealing with incidents involving hazardous materials, and liaison with the local fire service;
 - d) Emergency arrangements;
 - e) Safety of plant, including reactor dismantlement;

- f) Transport safety, including identifying standard road routes (with implications for congestion of narrow lanes), and dealing with incidents involving vehicle fires and leakage of hazardous material;
- g) Health and safety aspects of dust control from, for example, masonry crushing on the site;
- h) Integrity of flood defences;
- i) Release of radioactive material and non-radioactive wastes; and
- j) Secondary developments and re-cladding of reactor buildings will be subject to planning legislation.

27) The environmental statement should include reference to the above and sufficient detail to give a clear picture of the scope of issues involved and their relation to the environmental impact assessment. However, where appropriate, reference should be made to the relevant legislation and related submissions to the regulatory authorities, where the licensee has provided or will provide greater detail.

Points on other matters – whose consideration could be of benefit to the environmental statement

- 2) The licensee may wish to take into account the points listed below in the environmental statement, although these are not explicitly required in the statement.

- 3) Consideration may be given to:
 - a) Including strategies for monitoring the actual impacts of measures to be taken to avoid, reduce and, if possible, remedy significant adverse effects on the environment. This could cover gathering base-line data, and monitoring during the works and care and maintenance phases to demonstrate the effectiveness of the measures taken or to identify the need for measures to be reviewed and amended;
 - b) Using the proposed 100 year delay before site clearance begins to consider the options for ecological enhancement of the area;
 - c) Involving the local population in the decommissioning programme, in particular, discussing concerns and expectations, and involving local government in discussions on changes in land use and asset disposal arrangements with a view to benefiting the community.
 - d) Providing a summary matrix of the different activities associated with the proposed work and the range of environmental parameters potentially affected, with some form of ranking of the potential significance of any impact;
 - e) Providing a clear indication as to whether the project is likely to have significant effects on the environment of another European Economic Area State;
 - f) Ensuring that the policy framework described includes up to date information regarding any relevant central government policy;
 - g) Using photographs, figures and diagrams where appropriate to clarify text. Examples of such include:
 - i) Use of photomontage to demonstrate the phased demolition of structures;
 - ii) Demonstration that the nearest boundary of the River Ehen candidate Special Area of Conservation lies approximately 10 km from the site;
 - iii) A map showing the locations of off-site noise monitoring locations; and
 - iv) Indication of facilities, such as footpaths, on diagrams showing the identified Zones of Visual Influence.
 - h) Ensuring that potential benefits to the environment arising from the decommissioning project are adequately addressed (such as the long term affect on visual impact due to removal of the cooling towers).

HSE Library and Information Centres

Health and Safety Executive
Magdalen Information Centre
Magdalen House
Trinity Road
Bootle
L20 3QZ
Telephone: 0151 951 4382

Health and Safety Executive
Information Centre
Marshall House
Ringway
Preston PR1 2HS
Telephone: 0161 952 8200

Public libraries displaying the Pre-Application Opinion

Daniel Hay library
Lowther Street
Whitehaven
Cumbria CA28 7QZ
Telephone: 01946 852900

Seascale library
Gosforth Road
Seascale
Cumbria CA20 1PN
Telephone: 01946 728487

ANNEX 2 Consultees on the environmental statement

Consultation bodies

HSE consulted 11 individuals in 6 organisations

Copeland Borough Council
Countryside Agency
Cumbria County Council
English Nature
Environment Agency
Lake District National Park Authority

Other organisations

HSE consulted 56 individuals in 52 organisations

Allerdale Borough Council
Associated British Ports
Barrow in Furness Borough Council
British Ports Association
British Trust for Ornithology
Campaign for Nuclear Disarmament
Centre for Environment, Fisheries & Aquaculture Science (CEFAS)
Civil Aviation Authority
Committee on the Medical Aspects of Radiation in the Environment (COMARE)
Country Landowners Association
Crown Estate
Crown Estate c/o Bidwells
Cumbria Ambulance Service NHS Trust
Cumbria and Lancashire Strategic Health Authority
Cumbria Constabulary
Cumbria Wildlife Trust
Cumbrians Opposed to a Radioactive Environment (CORE)
Defence Estates
Department of Agriculture Fisheries & Forestry
Department for the Environment Food and Rural Affairs (DEFRA)

Direct Rail Services Ltd
Drigg and Carleton Parish Council
Dumfries and Galloway Council
Eden District Council
Eden Rivers Trust
English Heritage
Food Standards Agency
Friends of the Earth
Friends of the Lake District
Gosforth Parish Council
Greenpeace
Health Protection Agency
Highways Agency
Isle of Man Government, Department of Local Government and the Environment
Lancashire County Council
Ministry of Defence Estate Organisation
National Farmers Union
National Radiological Protection Board
National Trust
National Air Traffic Services (NATS) plc
North West Regional Assembly
Nuclear Free Local Authorities
Nuclear Safety Advisory Committee (NuSAC)
Office for Civil Nuclear Security (OCNS)
Office of the Deputy Prime Minister
Ponsonby Parish Council
Ramblers Association
Republic of Ireland, Department of the Environment and Local Government
Royal Society for the Protection of Birds
Royal Yachting Association
South Lakeland District Council
West Cumbria Primary Care Trust (North Cumbria Public Health Network)

Local Community Liaison Committee

HSE consulted 30 individuals in 20 organisations

Allerdale Borough Council

BNFL

Copeland Borough Council

Cumbria Constabulary

Cumbria County Council

Cumbria County Fire Service

Drigg and Carleton Parish Council Representative

Environment Agency

Gosforth Parish Council

Government Office North West

Member of Parliament

National Farmers Union

Ponsonby Parish Council

St Bridgets Parish Council

St Johns Beckermest Parish Council

Seascale Parish Council

Sellafield Nuclear Power Station

South/West Cumbria Health Authorities

United Utilities

Whitehaven and District Trades Council

ANNEX 3 Consultees who responded on the environmental statement

HSE received 24 responses on the environmental statement from 23 organisations

Civil Aviation Authority

Committee on the Medical Aspects of Radiation in the Environment

Copeland Borough Council

The Countryside Agency

Cumbria County Council

Cumbria County Council Emergency Planning Unit

Drigg and Carleton Parish Council

English Heritage

English Nature

Environment Agency

Friends of the Lake District

Gosforth Parish Council

Health Protection Agency (Cumbria and Lancashire Health Protection Unit)

Isle of Man Government, Department of Local Government and the Environment

Lake District National Park

Lancashire County Council

LCLC member (representing St Bridget's Parish Council)

North Cumbria Public Health Network

Nuclear Free Local Authorities

Nuclear Safety Advisory Committee

Republic of Ireland, Department of the Environment and Local Government

Royal Yachting Association

St John's Beckermeth Parish Council

ANNEX 4 Letter requesting evidence to verify information in the environmental statement

Mr A J Shuttleworth
The Company Secretary
British Nuclear Group Sellafield Ltd
Risley
Warrington
Cheshire
WA3 6AS

Your Ref: CRA 22689
File Ref NUC 157/16/1 P1 E96
CRX 71232R
Unique N^o
Date 13th April 2005

Dear Mr Shuttleworth

British Nuclear Group Sellafield Ltd, CALDER HALL POWER STATION

NUCLEAR REACTORS (ENVIRONMENTAL IMPACT ASSESSMENT FOR DECOMMISSIONING) REGULATIONS 1999

REQUEST FOR EVIDENCE TO VERIFY INFORMATION IN THE ENVIRONMENTAL STATEMENT; REGULATION 10(9)

I refer to the letter from Mr Howard dated 25 August 2004, applying for consent to carry out a decommissioning project at Calder Hall Power Station under regulation 4(a) and submitting an environmental statement under regulation 5 of the above Regulations, and my acknowledgement dated 7 September 2004. Subsequently, a public consultation was undertaken in accordance with the Regulations.

From its consideration of the comments received and other work, the Health and Safety Executive is of the opinion that evidence is required to verify information in the environmental statement provided by British Nuclear Fuels plc for Calder Hall Power Station under regulation 5, and for the purposes of the powers under regulation 10(9) of the above Regulations hereby requests that British Nuclear Fuels Sellafield Ltd provide evidence as specified in the Appendix to this letter.

Yours sincerely

Miss F E Taylor OBE
HM Superintending Inspector
Nuclear Installations Inspectorate

Copies: Mr S R Howard

APPENDIX – EVIDENCE TO BE PROVIDED

The environmental statement includes consideration of the environmental impacts arising from the disturbance of contaminated land during decommissioning work. Evidence is requested to verify the conclusion reached, that the mitigation measures identified in the statement will render any potential impacts not significant. In particular, evidence is requested regarding:

- a. The existing levels of ground contamination on the site;
- b. The locations and nature of existing and planned excavations to further characterise ground contamination in parts of the site where decommissioning may result in effects due to disturbance; and
- c. How excavations might affect any contamination present now, or which might arise under Calder Hall in the future.

ANNEX 5 Evidence to verify information in the environmental statement

Reasons for requesting evidence to verify information in the environmental statement

1. A brief explanation is given of the reasons why HSE considered it necessary to request evidence to verify information in the environmental statement.
2. HSE's pre-application opinion requested that the environmental statement include information to support the claim (in the scoping report) that there is not expected to be significant contamination of the ground or groundwater from operations at Calder Hall.
3. The environmental statement included information on ground contamination at the Calder Hall site and consideration of the effects of disturbing contaminated land, together with information on proposed mitigation measures. However, it was felt that further evidence was required to support the assessment of the effects of the decommissioning project on contaminated land. In particular, regarding information on existing ground contamination and the effects on this of any planned excavations.

Reasons for not seeking further clarification

4. It was HSE's opinion that the evidence together with the environmental statement provided sufficient information regarding the existing ground contamination at the site and the potential for disturbance of that contamination during the decommissioning project, including during any planned excavations.
5. The evidence also recognises the potential for migration of contamination onto the Calder Hall site from the wider Sellafield site, and acknowledges that should this occur, appropriate mitigation measures would be implemented (see paragraph 7 below).
6. The licensee has undertaken to implement mitigation measures to reduce or offset any significant adverse environmental impacts relating to contaminated land. The mitigation measures include a programme of sampling and testing of soils, which will be drawn up in discussion with relevant regulators (HSE and EA).
7. Should any change to the project be required due to the results of sampling (or for any other reason), that may have significant adverse effects on the environment, regulation 13 of EIADR will apply. The licensee will have to apply to HSE for a determination as to whether an environmental impact assessment is required and if so, the licensee will be required to apply for consent for the change and submit an environmental statement that will be subject to public consultation. Work on the decommissioning project shall not continue until this process is complete.

ANNEX 6 Reasons for topics not pursued for evidence or further information

The topics raised by consultees on the environmental statement that were not pursued for further information on the environmental statement are listed here with a brief explanation of why HSE considered that further information was not necessary. In several cases, the topics are regulated under other legislation where compliance with that legislation would ensure that adverse environmental impacts would be minimal.

1. Timetable for decommissioning: the environmental statement presented options for decommissioning timetables, and the environmental impacts considered did not change the overall outcome of the decommissioning strategy selection process. Current Government policy considers the safestore strategy to be potentially feasible and acceptable. The NDA may have a role to play in future decommissioning timetables and strategies.
2. Integrity of the safestore: statutory controls for the safestore are outlined in the environmental statement. Nuclear safety aspects of the safestore, including its integrity over a period of up to 100 years, will be regulated under NIA65 and enforced by HSE.
3. Security and terrorism: terrorism is the responsibility of the Office of Civil Nuclear Safety in DTI. The 2-mile exclusion zone around the site is the responsibility of CAA. NIA65 covers emergency arrangements, including evacuation.
4. National repository: the environmental impact assessment was based on a national repository for ILW being available in the future. If such a repository were not available, then there would be a change or extension to the decommissioning project. If that change or extension may have significant adverse environmental effects, then, under regulation 13 of EIADR, BNGSL would have to apply for consent to carry out that change or extension to the decommissioning project, and prepare an environmental statement on that change or extension for public consultation.
5. Packaging and long-term storage of ILW: safety aspects of packaging and long-term storage of ILW are covered by NIA65, RSA93, Nirex (and the NDA).
6. Control rod store inventory: The environmental statement states that two alternative methods are under consideration for retrieval of the control rods, depending on whether they are found to be ILW or LLW (to be determined by an assessment prior to work commencing).
7. Disposal of LLW: Disposal of LLW (including radioactively contaminated asbestos) is covered by NIA65, RSA93 and IRR99. LLW is currently disposed of to Drigg facility. Should future circumstances result in the need for changes to the LLW disposal route and thus to the decommissioning project, then regulation 13 of EIADR will apply as described in paragraph 4 above.
8. Free release waste: the environmental statement indicates that solid wastes arising from the radiation controlled area will be monitored and those found to be below regulatory concern made available for free release. Any free

release levels chosen must be in compliance with RSA93 and subject to regulation by EA.

9. Aerial and aqueous release of radioactivity: arrangements to control the release of radioactivity to air and water were outlined in the environmental statement. Planned discharges will be regulated under RSA93 and enforced by EA. Applications for new radioactive waste authorisations will be made to EA as required and will include consideration of best practical means. Unplanned accidental releases of radioactivity together with estimated doses to people from such untoward events are summarised in the environmental statement. Such unplanned accidental releases and untoward events will be regulated under RSA93, and NIA65 and REPPiR, as appropriate, and enforced by EA and HSE, respectively.
10. Treatment of non-radioactive hazardous wastes: The environmental statement explained that all waste transported offsite will be carried by licensed waste carriers and that the choice of disposal route will include licensed asbestos disposal sites, landfill sites, licensed special waste disposal contractors and recycling companies. The actual choice of contractor will depend on available service providers at the time the work is carried out. Disposal of wastes is regulated by the environment agency.
11. Choice of 2km limiting distance for consideration of effects on hydrogeology: The coastal nature of the site and the flow of water towards the coast indicate that this is an appropriate distance.
12. Socio-economic impact of reduction in workforce numbers: The environmental statement outlines the assessed impacts (direct and indirect) relating to the reduction in workforce and outlines the mitigation measures to be implemented (discussed in Annex 8). In addition, the statement discusses the likely impact of wider initiatives in West Cumbria to mitigate the effects, together with the support provided by BNGSL towards these. The NDA is required, under the Energy Act 2004, to consider giving encouragement and other support to activities that benefit the socio or economic life of communities living near designated reactor sites, installations and facilities or that produce other environmental benefits for such communities.
13. Nuisance value of noise: The environmental statement refers to noise quantities (dB(A)) that take into account the human ear's response rather than purely a measure of amplitude. This quantity is internationally accepted and has been found to correspond well with people's subjective reaction to noise.
14. Transport modes; rail transport of LLW to Drigg: The environmental statement outlines the intention that LLW generated will be transported to Drigg via rail, but recognises the uncertainties present regarding the potential for further use of the rail network. The statement explains that use of local suppliers and contractors would also limit the potential for rail transport. Should future changes to global climate conditions result in the need for changes to the method of transport to Drigg, then regulation 13 will apply as discussed in paragraph 4 above.
15. Improvements to the road network: Responsibility for the road network lies with the Highways Agency or local authority (depending upon the status of the road).

16. Assessment of the impact of traffic and transport: The environmental statement outlines that baseline traffic figures have been obtained for current operating levels at Sellafield and the impact of changes to those levels due to the Calder Hall decommissioning work have been assessed. The contribution of the Calder Hall project to traffic flows is assessed to be small (though some significant adverse effects were identified as discussed in Annex 8). If traffic flow (and resulting adverse environmental impacts) are required to change in the future, then regulation 13 will apply (as discussed in paragraph 4 above)
17. Averaging of air quality data from the Fellside Combined Heat and Power Plant and the Huntsman site at Whitehaven: The data was obtained in this form from a report prepared on behalf of Copeland Borough Council and the data provide additional background information regarding NO₂ levels in South West Cumbria. The data were not used for the assessment.
18. Air quality impacts arising from demolition of the cooling towers; relevance of limit values and national air quality objectives: Assessment criteria were obtained from occupational exposure limits and information published by HSE, The World Health Organisation, the National Institute for Occupational Safety and Health and the Occupational Health and Safety Administration. The limits used are those that apply to the UK regulatory and strategic framework for air quality.
19. Potential for impacts on otters along the River Calder: English Nature has indicated that the surveys undertaken were appropriate. In addition, the riverbanks within the vicinity of the station (rather than upstream) are stony where the river was straightened and there are no areas likely to be suitable for lying up or holts. The assessment did not identify any significant impacts on the aquatic environment.

1. ANNEX 7 Consent and conditions

Decommissioning Project Consent No.1

June 2005

NUCLEAR REACTORS (ENVIRONMENTAL IMPACT ASSESSMENT FOR DECOMMISSIONING) REGULATIONS 1999

CONSENT

granted under regulation 4(b)
in accordance with regulation 8(3)
with conditions attached under regulation 8(4)

CALDER HALL POWER STATION

The Health and Safety Executive, for the purposes of regulation 4(b) in accordance with regulation 8(3), hereby grants consent for carrying out the project³ applied for under regulation 4(a), in particular, to remove all buildings except the reactor buildings, alter the reactor buildings for a period of deferment, retrieve and transfer intermediate level radioactive waste to Sellafield and clear the site, subject to the conditions under regulation 8(4) attached.

Dated:

For and on behalf of the
Health and Safety
Executive

Signed

Dr A N Hall
A person authorised to act in
that behalf

³ Project as defined in regulation 2

**NUCLEAR REACTORS (ENVIRONMENTAL IMPACT ASSESSMENT FOR
DECOMMISSIONING) REGULATIONS 1999**

CONDITIONS

attached under regulation 8(4)
to Decommissioning Project Consent No. 1 granted under regulation 4(b)

CALDER HALLPOWER STATION

Condition 1

The project⁴ shall commence before the expiration of 5 years from the date of this Consent.

Condition 2

(1) The licensee is required to prepare and implement an environmental management plan to cover mitigation measures to prevent, reduce and where possible offset any significant adverse effects on the environment.

(2) The project shall not be carried out except in accordance with the environmental management plan.

Condition 3

Within 90 days of the date of this Consent, with reference to the environmental statement provided under regulation 5(1) and evidence to verify information in the environmental statement, provided under regulation 10(9), the environmental management plan shall:

- a. list the mitigation measures that are already identified in the environmental statement and evidence submitted to verify information in the environmental statement;
- b. list the options to implement work activities where mitigation measures may be required but where selection of an option will only be possible in the future;
- c. list the work activities where mitigation measures may be required but where assessments to identify mitigation measures will only be possible in the future.

Condition 4

Subsequent to condition 3, the environmental management plan shall:

⁴ Project as defined in regulation 2

- a. with reference to condition 3b, identify the mitigation measures for options that have been selected, giving reasons for their selection;
- b. with reference to condition 3c, identify the mitigation measures from assessments carried out, giving reasons for their selection;
- c. describe the effectiveness of the mitigation measures over time;
- d. describe significant changes to the mitigation measures in light of experience, giving reasons for such changes.

Condition 5

The licensee is required to:

- a. provide the environmental management plan to the Health and Safety Executive within 90 days of the date of this Consent and every year thereafter, or within such longer time as the Executive may agree;
- b. make the environmental management plan available to the public within 30 days of the plan being sent to the Health and Safety Executive, or within such longer time as the Executive may agree; the plan may replace earlier versions.

Condition 6

The licensee is required to provide notice to the Health and Safety Executive of any significant change to a mitigation measure to prevent, reduce and where possible offset any major adverse effects on the environment no less than 30 days before the change is made, or within such shorter time as the Executive may agree.

Dated:

For and on behalf of the
Health and Safety Executive

Signed

Dr A N Hall
A person authorised to act in
that behalf

ANNEX 8 Summary of environmental benefits and detriments and mitigation measures

A summary of the benefits and detriments of the environmental impacts identified by BNGSL is given here. The licensee has undertaken to implement any mitigation measures identified in the environmental statement (and will be required to do so in accordance with the environmental management plan referred to in the conditions attached to the consent).

1. Socio-economic: 47 topic areas were assessed. No key significant impacts were identified. There were 6 topic areas with long-term, adverse, permanent impacts, relating to employment levels at the site and in the surrounding area. Of these impacts, one was identified as major, four as moderate and one as minor. The mitigation measures identified in the environmental statement may reduce the magnitude of three of these and it is expected that additional mitigation will result from the wider regeneration initiatives currently being undertaken in West Cumbria. Mitigation measures include:
 - a. Consideration of managing the reduction of on-site employment through re-deployment elsewhere within the British Nuclear Group (although the scope for this may be limited given the context of declining employment levels at Sellafield over the next 10 – 15 years);
 - b. Opportunities for early retirement;
 - c. British Nuclear Group support to various job creation initiatives in West Cumbria (including the West Cumbria Development Fund and the Cumbria Inward Investment Agency); and
 - d. British Nuclear Group will encourage the use of locally sourced materials and services where practicable.
2. Ecology: 4 major topic areas were assessed for care and maintenance preparations and final site clearance (8 in total). During the scoping study, no potential impacts were identified for the care and maintenance period and so this was not assessed in detail within the EIA. Of the assessed effects, 2 were found to be potentially key significant, long term, adverse effects (the impact on bats during each of the two assessed phases of the project) and 4 were found to be potentially significant, short term, adverse effects (the impact on aquatic ecological receptors and peregrine during each of the two phases). However, the environmental statement identified mitigation measures, which if implemented will render all of the above effects not significant. Mitigation measures are:
 - a. A bat survey will be undertaken prior to demolition of buildings containing potential roosts / hibernacula and where necessary, further mitigation will be incorporated. These might involve the blocking of any entrances to roosts / hibernacula in areas that will be cleared (under licence from DEFRA) and the provision of alternative roosts / hibernacula;
 - b. Mitigation concerning the potential for release of contaminants into the aquatic environment is discussed in paragraph 4 below (surface water quality and drainage); and

- c. Suitable nest sites will be checked prior to any demolition works that are carried out during the breeding season (March – July). If nesting peregrine are present, demolition works that could impact on them will be postponed until after the breeding season.
- 3. Landscape and visual: 132 topics were assessed (of which, 92 related to views from the surrounding areas), and all the significant or key significant long-term effects were beneficial; 18 in total. Only 2 impacts were identified as short-term significant adverse and related to demolition work, to re-clad the reactor buildings and nighttime working. No mitigation measures are considered to be necessary for these effects.
- 4. Surface water quality and drainage: 8 topic areas were assessed, and all were significant. Of these, one was a major, long-term, benefit and related to the effect of cessation of abstraction on river flow and salmonid populations in the river Calder. The other 7 effects were moderate, long-term, adverse effects (relating to release of turbid water, sediments and spills). However, the environmental statement identified mitigation measures, which if implemented will render all of the above effects not significant. Mitigation measures include:
 - a. Adoption of best practice and adherence to industry guidance, such as; buffer strips next to water courses, cut off drains, sumps for collecting turbid site drainage, minimisation of soil stockpiling, use of geotextile filters and bunds / cut off drains within close proximity to water courses;
 - b. Wheel wash for traffic leaving site;
 - c. Sweeping of roads close to the decommissioning site to be kept swept;
 - d. Protective butts on bridge crossings to prevent turbid water running into the River Calder;
 - e. Vehicles to be kept in good working order and audited;
 - f. Formalisation of such measures and agreement with relevant stakeholders; and
 - g. Compliance with relevant legislation
- 5. Traffic and transport: 144 topic areas were assessed, of which 19 were significant, being a mix of beneficial and adverse impacts, all of minor magnitude. All effects related to changes in traffic flow and the effects of this at locations with a known poor accident record. The 10 minor, short-term adverse impacts were associated with slightly increased traffic flow during care and maintenance preparations and site clearance. Due to the nature of the effects and the fact that they are minor, no specific mitigation measures have been included within the assessment. However, the statement does indicate that a green transport plan will be implemented at the site. The 9 minor, long-term positive impacts relate to the effects of slightly decreased traffic flow during care and maintenance and following final site clearance.
- 6. Noise and vibration: 4 major topic areas were assessed (relating to the effects of construction work and transport vehicles during care and maintenance preparations and final site clearance), and 2 of these had significant, adverse, short-term impacts (noise and vibration effects during construction work). However, the environmental statement identified mitigation measures

(adoption of good working practices to ensure minimisation of noise and vibration during works), which if implemented will render both of the above effects not significant.

7. Geology, hydrogeology and soils: 10 topic areas were assessed, and all the impacts were identified as potentially significant, major, long-term adverse. The effects related to disturbance of existing ground contamination, temporary storage of materials and spills or leaks. However, the environmental statement identified mitigation measures, which if implemented will render all of the above effects not significant. Such mitigation measures include:
 - a. Appropriate review of existing survey data relating to contaminated land prior to commencing any work which might result in disturbance of contaminated ground;
 - b. Soil, waste and water testing prior to and during work and appropriate management of any contaminated material found during sampling; and
 - c. Bunding, appropriate handling protocols, contingency plans for spills.
8. Air quality and climatic factors: 2 major topic areas were assessed (relating to traffic flow and fugitive dust) for each of the three phases of decommissioning (6 in total). No adverse significant or key significant effects were found.
9. Archaeology and cultural heritage: The scoping report indicated that the potential for archaeological remains on the site were negligible, so no further assessment was undertaken. However, it was recommended that the Royal Commission on Historical Monuments in England (RCHME) carry out a level 1 survey before decommissioning commences. In addition, the licensee has undertaken to consider appropriate means of retaining the heritage interest associated with the design, layout, technology and operation of the power station itself and to discuss this with English Heritage.

