

A decision on the application to carry out a decommissioning project at

Oldbury nuclear power station

under the Nuclear Reactors (Environmental Impact Assessment for
Decommissioning) Regulations 1999 (as amended)



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decommissioning project at Oldbury nuclear power station
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amended)**

A report prepared by the Health and Safety Executive

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CONTENTS	Page
FOREWORD.....	vi
SUMMARY.....	vi
INTRODUCTION.....	1
BACKGROUND	2
Legislative framework for nuclear safety	2
Nuclear Installations Act 1965.....	2
Other legislation dealing with nuclear and radiological hazards.....	2
Effects of decommissioning on other countries.....	2
Regulators and others working together	3
Legislative process under EIADR	3
Application for consent to carry out a decommissioning project.....	3
Public consultation on an environmental statement.....	4
Public consultation on further information	4
Evidence to verify information in the environmental statement	4
Change or extension to a decommissioning project.....	4
Effects of decommissioning on other countries.....	5
Granting consent and attaching conditions	5
Transparency of HSE’s decision on an application	5
APPLICATION TO CARRY OUT A DECOMMISSIONING PROJECT.....	5
The consultation process	5
Request for a pre-application opinion	5
Public consultation on the environmental statement.....	6
Request for evidence to verify information within the environmental statement..	6
Organisations involved in the consultation process	7
Topics raised by consultees on the environmental statement – an overview.....	7
Request for evidence – including topics raised by consultees	7
Topics not pursued for evidence or further information – topics raised by consultees	7
REASONS FOR GRANTING CONSENT.....	9
Decision to grant consent.....	9
Information provided	9
Environmental benefits and detriments and consideration of measures to control adverse environmental effects (mitigation measures).....	9
Effects on other countries	10
Issues covered elsewhere – town and country planning.....	10

Issues covered elsewhere – health, safety and environment legislation	11
Issues covered elsewhere – Decommissioning timetables: The relation of government policy, decommissioning strategy and European initiatives to EIADR and the Oldbury environmental statement	11
Government policy	11
Decommissioning strategy review.....	13
European Commission initiatives.....	12
Oldbury environmental statement.....	12
CONDITIONS ATTACHED TO THE CONSENT.....	12
Content of the conditions	12
Reasons for the conditions.....	13
Condition 1.....	13
Condition 2.....	13
Condition 3.....	13
Condition 4.....	14
Condition 5.....	14
Condition 6.....	15
ANNEX 1 Pre-application opinion	16
ANNEX 2 Consultees on the environmental statement.....	40
ANNEX 3 Consultees who responded on the environmental statement	43
ANNEX 4 Letter requesting evidence to verify information in the environmental statement	44
ANNEX 5 Evidence to verify information in the environmental statement.....	46
Reasons for requesting evidence to verify information in the environmental statement.....	46
Reasons for not seeking further clarification.....	46
ANNEX 6 Reasons for topics not pursued for evidence or further information.....	47
ANNEX 7 Consent and Conditions.....	52
ANNEX 8 Summary of environmental benefits and detriments and mitigation measures	55
REFERENCES	62
GLOSSARY OF TERMS AND ABBREVIATIONS.....	65

FOREWORD

This document reports on the Health and Safety Executive's decision to grant consent for a decommissioning project at Oldbury nuclear power station to the licensee, Magnox Electric Ltd, under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (as amended). Oldbury is the seventh nuclear power station at which consent has been granted for a decommissioning project, the others being Hinkley Point A, Bradwell, Calder Hall, Chapelcross, Sizewell A and Dungeness A.

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 effective control of potential environmental impacts during the decommissioning of Oldbury 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 has shown that this provides an effective means of managing potential 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] and Council Directive 2003/35/EC[3], sets out a framework on the assessment of the effects of certain public and private projects on the environment and on public participation in respect of drawing up certain plans and projects relating to 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 (EIADR99)[4], as amended by the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) (Amendment) Regulations 2006 (EIADR06)[5].

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 Oldbury nuclear power station, Magnox Electric Ltd requested a pre-application opinion and provided information in a scoping report in March 2006. HSE undertook a public consultation on the scoping report and provided its pre-application opinion in May 2006. Magnox Electric Ltd applied to HSE for consent to carry out a decommissioning project and provided an environmental statement in March 2007. HSE undertook a public consultation on the environmental statement. Both public consultations involved around 80 individuals in 70 organisations. Following the consultation on the environmental statement, HSE requested and received evidence from the licensee in January 2008. HSE was able to make a decision to grant consent to carry out a decommissioning project at Oldbury nuclear power station under the Regulations in February 2008, 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 supporting evidence; the conclusion that environmental benefits would far outweigh detriments; the prediction that there would be no significant effects on the environments 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, Magnox Electric Ltd must prepare an environmental management plan that identifies mitigation measures, reports on their implementation and effectiveness, and reports on changes to such measures in light of experience. HSE must be notified by the licensee 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 by the licensee to HSE and be made available to the public.

INTRODUCTION

- 1 European Council Directive 85/337/EEC[1], as amended by Council Directive 97/11/EC[2] and Council Directive 2003/35/EC[3], sets out a framework on the assessment of the effects of certain public and private projects on the environment and on public participation in respect of the drawing up of certain plans and projects relating to 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, as amended[6] (TCPA(EIA)1999) and the Environmental Impact Assessment (Scotland) Regulations 1999, as amended[7]. 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 Directive is implemented in Great Britain for decommissioning nuclear reactor projects by the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (EIADR99)[4] as amended by the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) (Amendment) Regulations 2006 (EIADR06)[5]. The competent authority for EIADR¹ is the Health and Safety Executive (HSE).
- 4 On 6 April 2006 EIADR99 was amended by EIADR06. The purpose of the amendment regulations was to correct two typographical errors that were identified by the Joint Committee on Statutory Instruments; to achieve greater administrative clarity and efficiency; and to implement the (relevant) amendments made to EIADR99's parent directive- the European Council Directive 85/337/EC[1], as amended by Council Directive 97/11/EC[2] and Council Directive 2003/35/EC[3].
- 5 The licensee of Oldbury² Magnox Electric Ltd, applied to HSE for consent to carry out a decommissioning project under EIADR in March 2007.
- 6 This document reports on HSE's decision to grant consent for a decommissioning project at Oldbury. 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 Magnox Electric Ltd will take to control any major adverse effects of the project on the environment.

¹ EIADR - Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 as amended by the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) (Amendment) Regulations 2006. This term is used generally in the text of this report.

² Oldbury refers to Oldbury nuclear power station and is the term generally used in the text of this report

BACKGROUND

Legislative framework for nuclear safety

Nuclear Installations Act 1965

- 7 The Health and Safety at Work etc Act 1974 (HSWA74)[8] is primarily a statute for securing, among 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)[9] as relevant statutory provisions.
- 8 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, among 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.
- 9 Under NIA65, HSE may at any time attach to a licence such conditions as appear necessary or desirable in the interests of safety, or with respect to the handling, treatment and disposal of nuclear matter. These conditions give HSE powers to directly regulate the licensees' activities using licence instruments. 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

- 10 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 is regulated under the Ionising Radiations Regulations 1999 (IRR99)[10] and Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPPIR)[11], respectively, and enforced by HSE. Radioactive disposals, including discharges, are regulated under the Radioactive Substances Act 1993 (RSA93)[12] and enforced by the Environment Agency in England and Wales, and Scottish Environment Protection Agency (SEPA) in Scotland.

Effects of decommissioning on other countries

- 11 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.

- 12 EIADR contains 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 24); EIADR do not require a submission to the European Commission.

Regulators and others working together

- 13 Regulators and others work together on matters of mutual interest, and in particular, there are administrative arrangements between HSE and the Environment Agency, SEPA and the Food Standards Agency (FSA). When considering discharge authorisations, for example, the Environment Agency and SEPA consult HSE and FSA, and FSA monitors terrestrial and aquatic food.
- 14 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 (DEFRA) for nuclear installations in England and Wales, and with the Scottish Executive for nuclear installations in Scotland. The Article 37 submission is prepared by the Environment Agency or SEPA, as appropriate, in consultation with HSE and FSA. The Nuclear Decommissioning Authority (NDA) has the responsibility for liabilities arising from past and future government civil nuclear programmes³ 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

- 15 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.
- 16 EIADR99 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.
- 17 When planning to undertake an environmental impact assessment and preparation of 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 will base its opinion.
- 18 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

³ Arising from installations formally owned by BNFL and UKAEA.

organisations and agencies, namely: Natural England (formerly the Countryside Agency and English Nature) and the Environment Agency in England; Countryside Council for Wales and the Environment Agency in Wales; and Scottish Natural Heritage and SEPA in Scotland. HSE may also consult and take into account the views of other organisations and members of the public.

- 19 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

- 20 Once the licensee has undertaken an environmental impact assessment, applied for consent and provided an environmental statement, a public consultation must be carried out on the environmental statement. The consultation includes the consultation bodies and other organisations that HSE may wish to consult and local people. 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

- 21 If HSE is of the opinion that further information is necessary before it can make its decision, then HSE may request such information from the licensee. In such a case, public consultation is carried out on the further information under arrangements similar to those described above.

Evidence to verify information in the environmental statement

- 22 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

- 23 If there is a change or extension to any decommissioning reactor 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 subject to an environmental impact assessment. The licensee shall not commence or continue with the change or extension to the project, or any other part of the project that HSE may direct, until a determination is made. This requirement is relevant irrespective of whether the 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 and so consent was not required). If a positive determination is made, the licensee must apply for consent and provide an environmental statement on

the project to support the application. A public consultation must be carried out on that environmental statement. Regulation 13 of EIADR deals with changes or extensions to projects.

Effects of decommissioning on other countries

- 24 EIADR contains arrangements for consultation with other States party to the agreement on the EEA if a decommissioning project is likely to have significant adverse 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

- 25 At the end of the public consultation on the environmental statement including further information or evidence (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 to the consent 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

- 26 At the end of the process when HSE has made its decision on whether or not to grant consent for a new decommissioning project to start 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. Also under regulation 11(c) of EIADR, HSE must provide information regarding the right to challenge the validity of the decision and the procedures for doing so. The mechanism in place to challenge decisions made by HSE under EIADR, is via the Judicial Review process.

APPLICATION TO CARRY OUT A DECOMMISSIONING PROJECT

The consultation process

Request for a pre-application opinion

- 27 Magnox Electric Ltd wrote to HSE in March 2006 to request a pre-application opinion on what the environmental statement for Oldbury should contain. Magnox Electric Ltd provided information in the format of a 'Pre-application Opinion Scoping Report'. HSE consulted the consultation bodies and other organisations (including all members of the Site Stakeholder Group (SSG) on that report March–May 2006. HSE's pre-application opinion was sent to

Magnox Electric Ltd in May 2006. The pre-application opinion was copied to consultees in May 2006, namely, the consultation bodies and other organisations consulted by HSE (including SSG members who provided comments). The pre-application opinion was made available on HSE's website, 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 responses to be made publicly available. Copies of the licensee's 'Pre-application Opinion Scoping Report', and HSE's 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, and HSE's Knowledge Centre and local area office, for a year from the date of their publication (see Appendices 6 and 7 to Annex 1).

Public consultation on the environmental statement

- 28 Magnox Electric Ltd applied to HSE for consent to carry out a decommissioning project at Oldbury and provided an environmental statement in March 2007. HSE consulted on the environmental statement, the consultees are listed in Annex 2. In addition, Magnox Electric Ltd publicised the environmental statement in the local press (*Local Gazette*, *Western Daily Press* and *The Forester*) to involve local people. HSE publicised the consultation on the environmental statement on its website, which had a direct link to Magnox Electric Ltd's website. Magnox Electric Ltd made copies available for public inspection at eight locations near the site, and HSE made copies of the Environmental Statement available at its office nearest to the site- HSE, 4th Floor, The Pithay, Bristol, BS1 2ND (Appendix 6 to Annex 1), public libraries close to the site (Appendix 7 to Annex 1) and HSE's Knowledge Centre (Bootle, Appendix 6 to Annex 1).
- 29 The public consultation period ended in June 2007. 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 the licensee, and can be inspected at public libraries close to the site, and HSE's Knowledge Centre and local area office (see Appendices 6 and 7 to Annex 1).

Request for evidence to verify information within the environmental statement

- 30 HSE was of the opinion that evidence to verify information in the environmental statement was necessary. HSE wrote to Magnox Electric Ltd on 10 January 2008 to request evidence relating to the impacts of the project on the designated habitats and the species which use them. A copy of HSE's letter requesting evidence is appended as Annex 4. Magnox Electric Ltd's response was received in January 2008. The request for evidence is discussed in Annex 5.
- 31 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.
- 32 Copies of the environmental statement, and evidence, are available for public inspection at public libraries close to the site, HSE's Knowledge Centre and HSE's local area office (see Appendices 6 and 7 to Annex 1) for a period of one year from the date of the Consent granted by HSE (that is, until February 2009).

Organisations involved in the consultation process

- 33 HSE considered the environmental statement (including evidence) for Oldbury. HSE's consideration included holding discussions with Oldbury's HSE site inspector, stakeholders and also independent consultants contracted to HSE, as well as taking into account written comments received during the public consultations.
- 34 The organisations and agencies with expertise in planning and environmental matters (the consultation bodies) reviewed the environmental statement as appropriate, and HSE took into account their findings.
- 35 HSE also took account of the views of the other organisations it consulted and which provided comments (see Annex 3). These organisations have expertise, knowledge or interest in nuclear, planning and environmental matters.

Topics raised by consultees on the environmental statement – an overview

- 36 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.
- 37 Some consultees 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 are covered by related health, safety and environment legislation where compliance with that legislation will ensure that environmental impacts will 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.
- 38 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).
- 39 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 respondents on issues about which respondents have specific concerns.

Request for evidence – including topics raised by consultees

- 40 HSE requested evidence to verify information in the environmental statement relating to the impacts of the project on the designated habitats and the species which use them.
- 41 Full details of the request for evidence are included in HSE's letter to Magnox Electric Ltd 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 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 Some consultees expressed the view that site clearance should be undertaken earlier to avoid leaving a legacy for future generations. The environmental statement presented options for decommissioning that resulted in different timetables for decommissioning and then described the rationale for the option selected. Any future change in the timetable would be subject to regulation 13 of EIADR.
- 44 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 disposals including discharges will continue to be made under RSA93 and regulated by the Environment Agency.
- 45 Arrangements for security during the decommissioning project were a concern for some consultees. Regulation of security is the responsibility of HSE's Office for Civil Nuclear Security and the two-mile air exclusion zone around the site is the responsibility of the Civil Aviation Authority (CAA). NIA65 covers other possible incidents and accidents and the licensee's emergency arrangements.
- 46 With regard to ecology, consultees were concerned with the maintenance of the lagoons as a wildlife habitat. The assessment presented in the statement and evidence concludes that there are no significant environmental impacts on the lagoons or the species that use them as a result of the currently described decommissioning project.
- 47 Some consultees expressed concern regarding disturbance to peregrines. The environmental statement concluded there were no impacts on peregrines and any change to the mitigation would be reported in the environmental management plan. Concerns were also expressed relating to mitigation for bats, great crested newts, grass snakes, slow-worms and the saltmarsh. A mitigation strategy is detailed in the environmental statement and mitigation measures will be reported in the environmental management plan.
- 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 planning legislation or related health, safety and environment legislation, such that environmental impacts would be not significant.
- 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 evidence or 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 Oldbury under EIADR in February 2008, 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:
- HSE's view of the adequacy of the information provided in the environmental statement and evidence;
 - HSE's conclusion that environmental benefits would far outweigh detriments;
 - HSE's acceptance of the licensee's determination that the assessed impacts of the project would not be likely to have significant adverse effects on the environment in another EEA State; and
 - HSE's recognition that some issues would be adequately covered elsewhere. These issues were: town and country planning matters; compliance with health, safety, security 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 Magnox Electric Ltd 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 Magnox Electric Ltd had not foreclosed unnecessarily, at this early stage, possible appropriate approaches to the decommissioning process. In such cases, Magnox Electric Ltd 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 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 There were eight areas where significant adverse impacts were identified. These were air quality and dust, ecology, landscape and visual, geology

hydrogeology and soils, noise and vibration, socio-economic factors, surface water, and traffic and transport. These effects varied in duration and significance (see Annex 8). Mitigation measures have been identified in the assessment; these mitigation measures reduce the areas with significant impacts from eight to four. Within these areas the significance of impacts is reduced with the implementation of mitigation measures (for further detail see Annex 8).

- 56 There were three areas where potential or temporary key significant adverse impacts were identified. These were geology, hydrogeology and soils; noise; and traffic and transport. The geology, hydrology and soils issue related to the possible creation of new contamination pathways and inadvertent contamination of soils from inappropriate uses of contaminated soils/materials as infill material; mitigation measures will reduce the impact to not significant. The noise issue relates to potential impacts at nearby residential properties during care and maintenance preparations, the mitigation measures will reduce the impact to possibly significant. The traffic and transport issue relates to a temporary impact during care and maintenance preparations and final site clearance. Magnox Electric Ltd has undertaken to implement a travel plan as a mitigation measure, this is intended to assist in reducing the number of trips generated by the station throughout the entire decommissioning project.
- 57 Five topic areas showed long-term positive impacts of varying magnitude. These were landscape and visual; noise and vibration; ecology; geology hydrogeology and soils; and traffic and transport.
- 58 A short-term positive socio-economic impact was identified during final site clearance relating to the employment generated.
- 59 Further details on environmental effects and measures to control environmental effects are provided in Annex 8.

Effects on other countries

- 60 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 adverse effects on the environment in another EEA State.

Issues covered elsewhere – town and country planning

- 61 Where there are new structures to be built or substantial alterations to buildings, these developments will require planning consent. This will be obtained from the local planning authority, ie projects that will require planning consent at Oldbury include the construction of the radioactive waste storage building and re-cladding of the reactor buildings. Where necessary, these will be regulated under the Town and Country Planning Act 1990 (TCPA90)[13] 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 and or store radioactive waste might also require environmental impact assessment under the TCPA(EIA)1999[6]. In such cases where environmental impact assessment is required the public will also be consulted before any decision is made.

- 62 Another area where permissions may be necessary is for any infill materials that are used and have to be brought onto the site. This will be regulated under TCPA90 and relevant associated legislation and enforced by the relevant local planning authorities.
- 63 It follows, therefore, that Magnox Electric Ltd can begin work on all parts of the decommissioning project so long as the work 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, TCPA90 and other town and country planning legislation, as necessary.

Issues covered elsewhere – health, safety and environment legislation

- 65 The environmental statement 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 the Environment Agency, and there are administrative arrangements in place between HSE and the Environment Agency on working together on matters of mutual interest (see paragraphs 12 and 13).
- 67 It follows, therefore, that Magnox Electric Ltd can begin work on all parts of the decommissioning project so long as the work does not require additional permissions under related health, safety and environment legislation.
- 68 HSE and the Environment Agency 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, decommissioning strategies and European initiatives to EIADR and the Oldbury environmental statement

Government policy

- 69 Current decommissioning policy [14,15,16], that covers all (existing and new) UK nuclear industry facilities, states that:

Decommissioning operations should be carried out as soon as reasonably practicable, taking all relevant factors into account as provided for in the relevant operator's strategy and plan.

This includes power stations, other reactors, research facilities, fuel fabrication and reprocessing plants and laboratories on sites licensed under NIA65.

- 70 Under the Energy Act 2004 [17] the Nuclear Decommissioning Authority (NDA) was established to take responsibility for securing the decommissioning and clean up of civil nuclear sites.

Decommissioning strategy review

- 71 An environmental statement under EIADR needs to describe the options for decommissioning, including decommissioning timetables.
- 72 In its draft business plan 2008/11[18], NDA has stated its intention to establish a methodology to help determine decommissioning timescales taking account of the many factors that influence decommissioning timescales.

European Commission initiatives

- 73 Regulations implementing Council Directive 2001/42/EC[18] 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[19]. 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).

Oldbury environmental statement

- 74 The environmental statement described options for decommissioning, including the safestore strategy, options for decommissioning timetables and the future reuse of the land. A range of environmental impacts (including radioactive and non-radioactive wastes, waste minimisation, noise and vibration, transport, ecology, surface water quality and visual impacts) were considered during the process to develop the decommissioning strategy. Consideration of the environmental impacts did not change the overall outcome of the strategy selection process.
- 75 The environmental statement stated that the duration of the care and maintenance preparations phase would be about ten years, following this is the care and maintenance phase when the site will be maintained in a mainly quiescent state, then final site clearance phase of around eight years, which would start 85-105 years after cessation of generation. It is possible that the decommissioning timetable might change in the future, for example, a reduction in the care and maintenance period.
- 76 However, it should be noted that if a change to the decommissioning timetable resulted in a change to the project that may have significant adverse effects on the environment, then Magnox Electric Ltd must apply to HSE for a determination as to whether the project should be subjected to an environmental impact assessment. If so, Magnox Electric Ltd would have to apply for consent and prepare an environmental statement for public consultation under EIADR.

CONDITIONS ATTACHED TO THE CONSENT

Content of the conditions

- 77 HSE has attached conditions to the Consent. A copy of the Consent and conditions is appended at Annex 7. In brief, Magnox Electric Ltd must prepare

and implement an environmental management plan that identifies mitigation measures, describes their implementation and effectiveness, and any 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.

- 78 Regulation 16 of EIADR provides HSE with sufficient powers under HSWA74 to effectively enforce these conditions.
- 79 The licensee will make a copy of the environmental management plan available for public inspection at public venues close to the site.

Reasons for the conditions

- 80 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

- 81 Condition 1 requires Magnox Electric Ltd to start the project within five years of consent being granted. The project is dismantling or decommissioning work on the power station to which EIADR relate.

Condition 2

- 82 Condition 2 requires Magnox Electric Ltd 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

- 83 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:
- work activities with associated mitigation measures (as identified in the environmental statement and supporting evidence);
 - future work activities with a range of options for implementation with associated mitigation measures; and
 - future work activities that have not yet been assessed for the need for mitigation measures due to future uncertainties.
- 84 Most of the work activities have associated mitigation measures in the environmental statement (including evidence). Condition 3a requires these mitigation measures to be listed in the environmental management plan.
- 85 Some future work activities have a range of options for implementation, such as options for the management of the offshore structures. 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.

- 86 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, or the impact on wildlife on the offshore structures. 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 the 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

- 87 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.
- 88 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.
- 89 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

- 90 Condition 5 requires Magnox Electric Ltd 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 five to ten years. Timeframes for the site clearance phase are likely to be similar to those for the works phase.
- 91 Condition 5 also requires Magnox Electric Ltd 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

- 92 Condition 6 requires Magnox Electric Ltd to give HSE advance warning of any significant changes to mitigation measures to control major adverse effects on the environment. Significant changes to mitigation measures might become necessary to control major adverse environmental effects in the future.

ANNEX 1 Pre-application opinion

NUCLEAR REACTORS (ENVIRONMENTAL IMPACT ASSESSMENT FOR DECOMMISSIONING) REGULATIONS 1999

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

Issue

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

Background

- 2) EIADR implement 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 and Council Directive 2003/35EC) on the assessment of the effects of certain public and private projects on the environment and on public participation in respect of these.
- 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, Magnox Electric Ltd has asked HSE to provide a pre-application opinion under regulation 6 of EIADR as to the content of the environmental statement for Oldbury 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 "Oldbury nuclear power station Pre-Application Opinion Scoping Report" (referred to as 'the scoping report' throughout this opinion). The scoping report identifies a range of issues to be considered 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 as (amended 2006).
- 7) The environmental statement for Oldbury 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 give HSE the power to require the licensee to provide further information. HSE recognises that, within the scoping report, the licensee has indicated its intention to address the information required by Schedule 1 to EIADR.
- 8) The licensee has requested that HSE comments on the proposed assessment methodology. Where appropriate, such comments, relating to the assessment of specific topics, have been included in this opinion.

Consultation

- 9) HSE has consulted the consultation bodies specified in regulation 2 of EIADR on the scoping report provided by the licensee. 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. A number of consultees 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 the licensee 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 dust;
 - b) Archaeology and cultural heritage;
 - c) Ecology;
 - d) Geology, hydrogeology and soils;
 - e) Landscape and visual;
 - f) Noise and vibration;
 - g) Routine radioactive discharges.
 - h) Socio-economic;
 - i) Surface waters; and
 - j) 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 the licensee has indicated its intention to address these issues within the scoping report. Appendix 3 also includes comments on HSE's expectations in regard to the general content of the environmental statement.
- 14) In addition, consideration should be given to the issues raised and comments made in Appendices 4 and 5. These are discussed further below.

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

- 15) 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 4.

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

- 16) A number of other points are listed at Appendix 5. HSE suggests that, although not specifically required, their consideration could be of benefit to the environmental statement.

Presentation

- 17) 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 the HSE library and knowledge centre as listed in Appendix 6 and the public libraries listed in Appendix 7. Alternatively, the opinion is available on the internet at <http://www.hse.gov.uk/nuclear/consult.htm>

Implications

- 18) 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.
- 19) HSE will consult on the environmental statement for Oldbury nuclear power station, when this is provided by the licensee.

Contact

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Consultees on the scoping report

Consultation bodies

HSE consulted 4 individuals in 4 organisations

Countryside Agency
English Nature
Environment Agency
South Gloucestershire Council

Other organisations

HSE consulted 41 individuals in 40 organisations

Avon Wildlife Trust
Bristol City Council
Bristol Trust for Ornithology
Campaign to Protect Rural England
Civil Aviation Authority
COMARE (Committee of Medical Aspects of Radiation in the Environment)
County Land and Business Association
Crown Estates
DEFRA
English Heritage
Food Standards Agency (FSA)
Forest of Dean District Council
Friends of the Earth
Gloucestershire County Council
Gloucestershire Fire and Rescue Service
Gloucestershire Police
Gloucestershire Wildlife Trust
Greenpeace
Highways Agency
Health Protection Agency (HPA) Radiation Protection Division

Isle of Man Government Department of Local Government and the Environment
Lower Severn Drainage Board
National Farmers Union
National Trust
Nuclear Decommissioning Authority (NDA)
Nuclear Free Local Authority
NII Nuclear Installations Inspectorate
Nuclear Safety Authority (NuSAC)
Office of Civil Nuclear Security (OCNS)
Office of the Deputy Prime Minister (ODPM)
Railtrack Properties
Ramblers Association
Royal Yachting Association
Royal Society for the Protection of Birds (RSPB)
South Gloucestershire Primary Care Trust
Stop Hinkley and Shut Oldbury Campaign
Stroud District Council
Sustainable Thornbury
Swangrove estate
The Department of the Environment, Heritage and Local Government, Ireland

Site Stakeholder Group

HSE consulted 42 individuals in 35 organisations

Alveston Parish Council
Aust Parish Council
Avon Fire and Rescue Service
Avon & Somerset Constabulary
Bristol City Council
Bristol Port Company
Chepstow Town Council
Dept. of Trade and Industry
Environment Agency
Environmental Health Dept.
Falfield Parish Council
Food Standards Agency

Forest of Dean District Council
Friends of the Earth
Gloucester Harbour Trustees
Gloucestershire Association of Parish & Town Councils (Forest Area)
Health Protection Agency
Hill Parish Meeting
House of Commons
Independent Pollution Expert
Monmouthshire County Council
National Assembly for Wales
National Farmers Union
Oldbury Power Station (Staff side LJC Representative)
Oldbury on Severn Parish Council
Olverston Parish Council
Pilning and Severn Beach Parish Council
Rockhampton Parish Council
South Gloucestershire Council
South Gloucestershire Council Charfield Ward
Thornbury Chamber of Commerce
Thornbury Town Council
Tytherington Parish Council
Welsh Water/DWR Cymru
Wessex Water

Consultees who responded on the scoping report

HSE received 16 responses on the scoping report from 16 organisations.

Avon Wildlife Trust

COMARE (Committee of Medical Aspects of Radiation in the Environment)

English Nature

Environment Agency

Gloucestershire Association of Parish & Town Councils (Forest Area)

Gloucestershire County Council

Health Protection Agency

Highways Agency

Isle of Man Government Department of Local Government and the Environment

Lower Severn Drainage Board

Royal Yachting Association

South Gloucestershire Council

South Gloucestershire Primary Care Trust

Sustainable Thornbury

The Countryside Agency

The Department of the Environment, Heritage and Local Government, Ireland

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 indicated its intention to address these issues within the scoping report.

Description of the project

- 2) EIADR require that the environmental statement includes a description of the project, including in particular:
 - a. A description of the physical characteristics of the whole project and the land-use requirements during the construction and operational phases;
 - b. A description of the main characteristics of the production processes, for instance the nature and quantity of the materials used; and
 - c. An estimate, by type and quantity, of expected residues and emissions resulting from the operation of the proposed project.
(EIADR, Schedule 1, paragraphs 1 and 8)
- 3) HSE expects the statement to provide a clear picture of the whole project, including:
 - a) The care and maintenance preparations phase;
 - b) The care and maintenance phase;
 - c) The final site clearance phase;
 - d) Transport; and
 - e) Treatment of wastes.

Options and reasons for option chosen

- 4) EIADR require that the environmental statement includes 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, 10 and 11). HSE expects the statement to address options for the whole project, as listed in paragraph 2 above.

Description of likely effects on the environment

- 5) EIADR require that the environmental statement describe the likely effects of the proposed project on the environment, which should cover direct effects and any 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, paragraphs 3 and 4).

- 6) HSE expects the statement to cover the whole project through dismantling to site clearance, and address, among 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.

- 7) HSE expects the consideration of the cumulative nature of effects to include assessment of the added impact of the decommissioning project to existing developments and works, even when unrelated to the project. In addition, the cumulative effects on the environment from different aspects of the project must be assessed and clearly described within the statement. To carry out the assessment of cumulative effects the following types of projects should be included (subject to the availability of information):
 - a. Existing completed projects
 - b. Approved but uncompleted projects
 - c. Ongoing activities
 - d. Plans or projects for which an application has been made and which are under consideration by the consenting authorities
 - e. Plans and projects which are reasonably foreseeable, i.e. projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.

Measures to control effects on the environment

- 8) EIADR require that the environmental statement describes measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment (EIADR, Schedule 1, paragraphs 5 and 9).

Radioactive emissions and wastes

- 9) HSE expects the environmental statement to 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

- 10) EIADR require that the environmental statement includes a non-technical summary of the information provided (EIADR, Schedule 1, paragraphs 6 and 12).

Indication of any difficulties

- 11) EIADR require that the environmental statement includes an indication of any technical deficiencies or lack of know-how encountered in compiling the information (EIADR, Schedule 1, paragraph 7).

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 submitted by the licensee. Some of these detailed points are not explicitly described but may be mentioned within the scoping report. The level of detail provided in the environmental statement regarding issues covered by other legislation (Paragraph 30 of this Appendix), should be consistent with that described in Paragraph 31 of this Appendix.

Air quality and dust

- 2) 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.
- 3) Consideration should be given to extending the assessment zone for dust emissions from decommissioning works beyond the 1 km zone around the site boundary.
- 4) Consideration should be given to providing indicative levels for predicted atmospheric concentrations of Particulate Matter (PM₁₀) at relevant receptor locations, arising from dust generating works, for example construction, demolition, excavation, use of explosives, movement of vehicles, loading and stockpiling of soil and rubble. Consideration should be given to formatting the predicted concentrations for each receptor to enable comparison with the objectives included in the Air Quality (England) Regulations 2000 (as amended).
- 5) Consideration should be given to assessing the effects of changes to on-site combustion processes.
- 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 controlled and monitored away from site and what mitigation measures will be employed to minimise dust impact.

Archaeology and cultural heritage

- 7) Consideration should be given to discussing the extent and nature of the survey to be undertaken with appropriate regulators and a summary of discussions included in the environmental statement.
- 8) If the proposals impact on the existing hydrology within the vicinity of the site, consideration should be given to assessing the effect of the project on archaeological deposits within the levels.

Ecology

- 9) Consideration should be given to the inclusion of the following areas in the environmental impact assessment (HSE recognises that the licensee has indicated generically that such sites will be included in the assessment):
 - a) Severn Estuary Site of Special Scientific Interest (SSSI)
 - b) Severn Estuary Special Protection Area (SPA)
 - c) Severn Estuary Wetland of International Importance under the Ramsar Convention
 - d) Severn Estuary possible Special Area of Conservation (pSAC)

HSE would expect such an assessment to include consideration of loss of habitat and impact on species.

- 10) Consideration should be given to undertaking field surveys during appropriate periods of the year, to determine the extent of inhabitation of the study area by protected species, in particular:
 - a) Undertaking a habitat survey to identify any important habitats and to note any species listed under national (UK) or local Biodiversity Action Plans;
 - b) Determining whether protected and other animal species are present in the assessment area, and if so, including in the assessment for example the medicinal leech, other invertebrate communities, bats, badgers, otters, water voles, and great crested newt, grass snakes and slow-worms, and other relevant reptiles and amphibians;
 - c) Determining whether protected and other plant species are present in the assessment area and if so, including in the assessment: for example *Alopecurus bulbosus*, *Puccinellia rupestris* and *Trifolium*;
 - d) Assessing patterns of breeding, feeding and roosting of birds within the site itself and within 2km around the site boundary;

- e) Assessing whether protected and other species of birds are present, for example wigeon, teal, dunlin, curlew, ringed plover, redshank, turnstone, shelduck, tufted duck, bullfinch or song thrush; and
- f) Determining whether hedgerows or other semi-natural vegetation present in the assessment area qualify as 'important' under the Hedgerow Regulations 1997.

HSE recognises that Magnox are in the process of undertaking a number of such surveys.

11) Consideration should be given to:

- a) Assessing the impact on sensitive receptors and habitats within close proximity to the inner security boundary;
- b) Assessing the impacts on flora and fauna known to occur along the foreshore and floodplain of the Severn Estuary and the grazing pasture and silt lagoons adjoining Oldbury power station, for example great crested newts and badgers;
- c) Assessing the impact of air pollutants like nitrogen oxides (and nitrogen deposition), sulphur dioxide, volatile organic compounds, particulate emissions and dust on sensitive species that may be present;
- d) Assessing the impacts on bird populations including consideration of internationally and nationally important populations of protected, wintering, migratory and passage bird populations, and also loss or disturbance of feeding habitat, established roosting locations/habitat and breeding habitat and disruption to flight paths and migration routes;
- e) Discussing appropriate baseline conditions for designated sites with English Nature and including summary of discussions in the environmental statement;
- f) Assessing the impact of water quality changes, and noise and vibration impacts affecting migration runs of fish species listed in the SSSI citation and Ramsar citation; and
- g) Demonstrating a commitment to agree surveys and mitigation measures with relevant regulators when and if appropriate.

12) Consideration should be given to assessing the impact of changes in, or cessation of, abstractions and discharges via cooling water system¹ and works to remove related structures, for example on coastal processes

¹ Though HSE recognises that changes in, or cessation of, abstractions and discharges are an effect of end of generation rather than strictly part of the decommissioning project

- 13) 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 effects will be avoided off – set or mitigated.
- 14) Consideration should be given to assessing the possible options for development of the silt ponds as habitats, including the environmental effects, benefits and disadvantages of either reclamation and conversion to grassland, or allowing a wetland habitat to develop.

Geology, Hydrogeology and soils

- 15) Consideration should be given to:
- a) Providing baseline information for contaminated material on- (and if relevant off-) site;
 - b) Assessing the effects of temporary storage of waste (contaminated or non contaminated) of soils and hydrogeology; and
 - c) Assessing the impacts on estuarine sedimentary, morphological and geomorphological processes, which are integral to the interest features of the designated sites

Landscape and visual

- 16) Consideration should be given to including assessment of visual impacts as viewed from the estuary.
- 17) Consideration should be given:
- a) To providing details of the location, height, design, sensors and luminance of all floodlighting, which may be used, together with the proposed measures to limit obtrusive glare to nearby properties; and
 - b) Consider the effects of changes in lighting on pedestrians and mariners

Noise and Vibration

- 18) The licensee must consult the appropriate council regarding noise and vibration.
- 19) Consideration should be given to ecological effects of transient sources of noise e.g. during demolition the noise and vibration may have an affect on migration runs of fish.

Socio-economic

- 20) Consideration should be given to assessing the impact on the Severn Way and Public Rights of Way, and where necessary consideration should be given to mitigation measures

Surface waters

- 21) Consideration should be given to referring to Department of Transport Guidance⁴ when evaluating any highway related impacts on surface waters (for example the effects of highway runoff on pollution).
- 22) Consideration should be given to assessing the effect of the site's activities on the coast and coastal habitats (including coastal processes), in particular:
- a) Impacts that may occur due to changes in water extraction rates and discharges to the tidal reservoir; and
 - b) Changes that may occur in the volume or water quality of Lagoons

Traffic and transport

- 23) Consideration should be given to:
- a) Including assessment of traffic related pedestrian and cyclist safety;
 - b) Assessing the condition of the relevant parts of the road network and bridges;
 - c) Assessing the impact of the project on Junction 14 of the M5;
 - d) Assessing the need to resurvey traffic levels and trends at some appropriate stage in the future (to address the uncertainties associated with data beyond 2030);
 - e) Assessing the effects of any proposed physical alterations to road junctions or general carriageway alignments on noise levels and air quality;
 - f) Discussing road maintenance requirements with the relevant highway authority;

⁴ The Design Manual for Roads and Bridges, Volume 11 [DMRB 11] – Environmental Assessment, Department of Transport, 1993 (as amended, 2002)

- g) Discussing special arrangements that may be required for the transport of large/heavy loads, and contingency plans in the event of an incident, with the relevant highway authority; and
 - h) Further assessing the options of road, water and / or rail transport
- 24) Consideration should be given to discussing the potential for mitigation measures to reduce the impact of increased traffic flow with the relevant highway authority and to include a summary of discussions in the environmental statement.
- 25) Consideration should be given to the effects on water navigation and recreational boating in the area, caused by removal of the tidal reservoir and cooling water intake and outfall structures (HSE recognises that the licensee has indicated that this will be included in the assessment) including:
- a) Notices to Mariners to be issued, setting out the details of the operation; and
 - b) That any vessels or structures below Mean High Water Springs will be correctly marked and lit in accordance with the requirements of the local Navigation Authority.

Civil engineering works and secondary developments

- 26) 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 any proposed waste management facility or waste store;
 - 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 that are likely to be required during the decommissioning project.
- 27) Consideration should be given to providing information on the programme of other civil engineering works, which are to be undertaken on site during the 'Care and Maintenance Preparation Phase'. In particular this might include information on:

- a. Specific engineering tasks to be carried out, for example, dismantling of plant, demolition of existing buildings, excavation work, piling, use of explosives; and
- b. The likely timing of these tasks.

Radioactive waste disposal

28) Consideration should be given to:

- a. Providing indicative radioactive discharge data for the care and maintenance preparation phase;
- b. Indicating outline radioactive discharge profiles for the care and maintenance and the site clearance phases;
- a. Providing an indication of removal of radioactive material from site during each decommissioning phase, in terms of the proportion of the total present at the start of the project;
- b. Providing an indication of the amount of radioactive waste to be stored on site;
- c. 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. Consideration should be given to consulting appropriate regulators with respect to dispersion modeling of aqueous radioactive discharge to the estuary and also in calculating gaseous radioactive discharge to ensure estimated values are appropriate.

Treatment of non-radioactive wastes

29) 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, including an indication of the amounts of such waste to be stored on site;
- 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.

Issues covered by other legislation

30) 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) Final delicensing of the site;
- g) 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;
- h) Health and safety aspects of dust control from, for example, masonry crushing on the site;
- i) Integrity of flood defences;
- j) Release of radioactive material and non-radioactive wastes; and
- k) Secondary developments and re-cladding of reactor buildings.

31) 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

- 1) The licensee may wish to take into account the points listed below in the environmental statement, although these are not explicitly required by EIADR.
- 2) 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) Demonstrating, where appropriate, how environmental management of the decommissioning project will contribute to local sustainable development priorities;
 - d) 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.
 - e) 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;
 - f) Providing a clear indication as to whether the project is likely to have significant effects on the environment of another European Economic Area State;
 - g) Ensuring that the policy framework described includes up to date information regarding any relevant central government policy;
 - h) 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) A map showing the locations of off-site noise monitoring locations; and
 - iii) Indication of facilities, such as footpaths, on diagrams showing the identified Zones of Visual Influence.
 - i) Ensuring that potential benefits to the environment arising from the decommissioning project are adequately addressed.

HSE Knowledge Centre and Area Office displaying the Pre Application Opinion

Health and Safety Executive
Knowledge Centre
Redgrave Court
Merton Road
Bootle
L20 7HS
Telephone: 0151 951 4382

Mrs L Mackie
Health and Safety Executive
4th Floor
The Pithay
Bristol
BS1 2ND
Telephone: 0117 9886000

APPENDIX 7

Public libraries displaying the Pre-Application Opinion

Mrs J Potter
Lydney Library (covers Forest of Dean)
Hill Street
Lydney
GL15 5HW
Telephone: 01594 842769

Mrs A E Thomas
Chepstow Library
Manor Way
Chepstow
Gwent
NP16 5HZ
Telephone: 01291 635730

Ms D Black
The Public Library
Shield Road Retail Park
Link Road
Filton
South Gloucestershire
BS34 7BR
Telephone: 01454 865670

Ms C Whiteman
The Public Library
Fiddlers Wood Lane
Bradley Stoke
South Gloucestershire
BS32 9BS
Telephone: 01454 865723

Mr N Weston
The Public Library
High Street
Chipping Sodbury
South Gloucestershire
BS37 6AH
Telephone: 01454 865719

Mr N Weston
The Public Library
44 West Walk,
Yate,
South Gloucestershire
BS37 4AX
Telephone: 01454 865661

Mr R Faler
The Public Library
Rodway Road
Patchway
South Gloucestershire
BS34 5PE
Telephone: 01454 865674

Mr R Faler
The Public Library
St Mary Street
Thornbury
South Gloucester
BS35 2AA
Telephone: 01454 865655

ANNEX 2 Consultees on the environmental statement

Consultation bodies

HSE consulted four individuals in three organisations

Environment Agency
Natural England
South Gloucestershire Council

Other organisations

HSE consulted 41 individuals in 37 organisations

Avon Wildlife Trust
Bristol City Council
Campaign to Protect Rural England
Civil Aviation Authority
Countryside Council for Wales
Committee on Medical Aspects of Radiation in the Environment
Country Land and Business Association
Crown Estates
Department for Communities and Local Government
Department for the Environment Food and Rural Affairs
Department for the Environment, Heritage and Local Government Ireland
English Heritage
Food Standards Agency
Forest of Dean District Council
Gloucestershire County Council
Gloucestershire Fire and Rescue Service
Gloucestershire Police
Gloucestershire Wildlife trust
Greenpeace
Highways Agency
Health Protection Agency
Isle of Man Government Department of Local Government and the Environment

Lower Severn Internal Drainage Board
National Farmers Union
National Trust
Nuclear Decommissioning Authority
Nuclear Free Local Authority
Nuclear Safety Advisory Committee
Network Rail
Ramblers Association
Royal Yachting Association
Royal Society for the Protection of Birds
South Gloucestershire Primary Care Trust
Stop Hinkley and Shut Up Oldbury Campaign
Stroud District Council
Sustainable Thornbury
Swangrove Estate

Site Stakeholder Group

HSE consulted 41 individuals in 31 organisations and one member of the public.

Alveston Parish Council
Aust Parish Council
Avon Fire and Rescue Service
Avon and Somerset Police
Bristol City Council
Bristol Port Company
Bristol Waste Water Treatment Works
Chepstow Town Council
Environment Agency
Falfield Parish Council
Food Standards Agency
Forest of Dean District Council
Friends of the Earth
Gloucester Harbour Trust
Gloucestershire Association of Parish Councils (Forest Area)
Health Protection Agency
Hill Parish Meeting

House of Commons
Monmouthshire County Council
National Farmers Union
Oldbury Power Station
Oldbury on Severn Parish Council
Olverston Parish Council
Pilning and Severn Parish Council
Rockhampton Parish Council
South Gloucestershire Council
Thornbury Chamber of Commerce
Thornbury Town Council
Tytherington Town Council
Welsh Water
Welsh Assembly Government
Member of Public

ANNEX 3 Consultees who responded on the environmental statement

HSE received 15 responses on the environmental statement from 15 organisations

Aust Parish Council

Avon Wildlife Trust

Committee on Medical Aspects of Radiation in the Environment

Department of the Environment, Heritage and Local Government Ireland

Environment Agency

Food Standards Agency

Gloucestershire County Council

Gloucester Harbour Trust

Health Protection Agency

Highways Agency

Isle of Man Government Department of Local Government and the Environment

Natural England

Royal Yachting Association

South Gloucestershire Council

Thornbury Town Council

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

**Mr. MJ Cogbill
The Company Secretary
Magnox Electric Ltd.
C11 Berkeley Centre
Berkeley
Gloucestershire
GL13 9PB**

Your ref: 500019359/OBA 50681N
File ref: 4.11.80.
Unique No: OLD 70712
Date: 10th January 2008

Dear Mr. Cogbill,

**Magnox Electric Ltd. Oldbury Nuclear Power Station
Nuclear Reactors (Environmental Impact Assessment For Decommissioning) 1999 (as amended)**

Request for evidence to verify information in the Environmental Statement: Regulation 10(9)

I refer to the letter from Mr. J Lamonby dated 23rd March 2007 applying for consent to carry out a decommissioning project at Oldbury Nuclear Power Station under regulations 4(a) and submitting an environmental statement under regulation 5 of the above Regulations, and Dr. JS Nettleton's acknowledgement dated 22nd March 2007. 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 Magnox Electric Ltd. for Oldbury Nuclear Power Station under regulation 5, and for the purposes of the powers under regulation 10(9) of the above Regulations hereby requests that Magnox Electric Ltd. provide evidence as specified in the Appendix to this letter.

Yours sincerely

**Dr. J S Nettleton
Head of Unit 2C: Nuclear Sites; Health, Safety, Safeguards and Environmental Impact
HM Superintending Inspector of Health and Safety**

Copies:

Mr. J Lamonby Site Manager, Oldbury Nuclear Power Station
Dr. S Hall Magnox Electric Ltd. Berkeley Centre

APPENDIX – EVIDENCE TO BE PROVIDED

In its environmental statement Magnox Electric Ltd has presented an assessment of the ecological impacts of the project, including the impacts associated with the removal of the tidal reservoir wall. The removal of the tidal reservoir wall is expected to have a long-term beneficial impact by returning the stretch of estuary to a more natural tidally impacted habitat. In order for HSE to assess the impacts of the project on the Severn Estuary SSSI, Ramsar site and SPA, evidence is requested from Magnox Electric Ltd which:

- explains the impact on habitats and species arising from the removal of the tidal reservoir; and
- re-analyses, using the data already presented in the environmental statement:
 - the significance of the proposal for bird populations; and
 - the impacts on passage species

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 The environmental statement presented an assessment of the ecological impacts of the decommissioning project.
- 3 Comments from a number of consultees requested further explanation of the impacts of the project on the Severn Estuary SSSI, Ramsar site and SPA and the species which use them.
- 4 HSE considered that evidence was required to verify that there was no significant adverse impact on the designated habitats or the species that use them and that the mitigation proposed would therefore be appropriate.

Reasons for not seeking further clarification

- 5 It was HSE's opinion that the evidence together with the environmental statement provided sufficient assurance that there would be no significant adverse effects from the currently described decommissioning project on the Severn Estuary SSSI, Ramsar site and SPA and the species which use them, as the assessment had concluded.
- 6 Changes or extensions to projects which might have significant adverse effects on the environment, such as an adverse impact on the lagoons, would be subject to a determination from HSE, at which stage relevant statutory consultees would be consulted.

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

The main topics raised by consultees on the environmental statement that were not pursued for evidence or further information on the environmental statement are listed here with a brief explanation of why HSE considered that evidence or 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 Communications

Magnox Electric Ltd has made a commitment to build on its current communications strategy, which has included taking part in a number of meetings and giving presentations about decommissioning in general and EIADR application. Magnox Electric Ltd will continue to liaise with South Gloucestershire Council and other consultees as the project progresses.

2 Flood risk

The site licence requires that the site has an adequate safety case to justify the continued safety with respect to external hazards including flood risk.

3 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. Decommissioning timescales are regulated through the site licence. Should there be changes to the decommissioning strategy then regulation 13 of the EIADR will apply. When there is a change or extension to a project that may have a significant adverse effect Magnox Electric Ltd would apply to HSE for a determination of whether an EIA is required.

4 Security

Security arrangements are the responsibility of HSE's Office for Civil Nuclear Security. NIA65 covers emergency arrangements. The two-mile air exclusion zone around the site is the responsibility of the Civil Aviation Authority (CAA).

5 Packaging and long-term storage of intermediate level waste (ILW)

Safety aspects of packaging and long-term storage of ILW are addressed via the nuclear licensing regime (in consultation with the environment agencies for environmental matters). The process of site selection for a final repository is being addressed by the government and NDA.

6 End state

There has been an NDA consultation on the issue of endstates. If an alternative end use for the Oldbury site or part of the Oldbury site, such as the tidal reservoir, resulted in a change to the decommissioning project as currently described, then regulation 13 of the EIADR would apply if there may be a significant adverse effect to the environment.

7 Disposal of low level waste (LLW)

Disposal of LLW is covered by NIA65, RSA93 and IRR99. LLW is currently disposed of to the LLW repository located near Drigg. 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 above.

8 Air quality impact from dust emissions and vehicles

Emphasis in the environmental statement is on air quality and dust from vehicle movements and demolition activities. Mitigation measures identified include: on-site roads to be cleaned regularly; sheeting of vehicles carrying dusty loads; use of water sprays for demolition and in-fill activities; the minimisation of unnecessary material and waste handling as far as practicable; the sheeting of surfaces/use of wind fences to prevent dust release from stockpiles, and the use of wheel and body washing where appropriate. The mitigation measures are designed to prevent dust arising at source and will render the impacts as not significant.

With regard to the possible impacts of dust deposition on the saltmarsh, in addition to the mitigation measures described above, the environmental statement identifies dust monitoring. Magnox Electric Ltd will use dust monitoring as a first tier in the process of determining if any dust deposition is occurring. Magnox Electric Ltd has indicated their continued openness to discuss queries from consultees relating to dust.

9 Archaeology and cultural heritage

This section of the environmental statement concluded that there is no evidence of surviving features of archeological interest within the power station.

Archived material will be transferred to the NDA's National Nuclear Archive during decommissioning.

10 Cumulative effects

Magnox Electric Ltd considered five projects in relation to cumulative effects: two proposed wind farms at Avonmouth Port, the proposed expansion of Avonmouth Port, possible flood defence improvements in the Avonmouth and Cardiff/Newport areas, and the decommissioning of Berkeley power station.

No planning applications had been submitted for the Avonmouth wind farm (Wessex Water), the Avonmouth Port expansion and the flood defence

improvements and there was no other available information for Magnox Electric Ltd to consider the potential cumulative effects of these projects alongside the decommissioning project.

A planning application was available for the wind farm at Avonmouth Port proposed by the Bristol Port Company; Magnox Electric Ltd considered that based on the timescales supplied, construction would not overlap with the Oldbury decommissioning work and therefore this project was not considered further.

The cumulative impacts associated with the decommissioning at Berkeley power station were considered in the environmental statement, no significant impacts were identified based on the distance and timing of the project precluding impacts.

Any changes or extensions to the project which may result in cumulative significant adverse environment effects will be subject to the requirements of regulation 13.

11 Ecology

Dust deposition on the saltmarsh; Mitigation measures have been identified which render the effects identified as insignificant. Magnox Electric Ltd has committed to monitor the effectiveness of dust mitigation.

Disturbance to peregrines: Magnox Electric Ltd monitors the site for peregrines and should the birds attempt to nest on either the nesting platform or any of the other buildings the need for mitigation would be reviewed.

Bats were surveyed and the impacts on bats assessed as not significant. Before final site clearance buildings will be surveyed for bats and breeding birds.

Hedges are included in the ecological assessment and there are currently no proposals to remove hedges.

Regarding great crested newts, badgers and reptiles, Magnox Electric Ltd has set out mitigation strategies in the Environmental Statement including the requirement to apply when appropriate for licences.

The assessment presented in the statement and evidence concludes that there are no significant adverse environmental impacts on the lagoons or the species that use them as a result of the decommissioning project. In the event of a change or extension to the project that may result in a significant adverse effect, the licensee will apply to HSE for a determination on whether an EIA is required. If the lagoons were effected HSE would consult Natural England as to our determination and if an EIA was required there would be a formal consultation.

12 Geology, hydrogeology and soils

Contaminated land has been assessed in the environmental statement and mitigation measures are provided which will reduce all the potential adverse significant impacts identified to not significant. The outfall culverts will be demolished by breaking through the roof slab and allowing debris to settle in the invert, the assessment in the environmental statement, supported by the evidence, does not suggest that the collapsed culverts would protrude above the

level of the sea bed. If a risk of the outfall culverts becoming exposed and having an adverse impact arose, complete removal of the culverts would be reviewed by Magnox Electric Ltd, if the removal might have a significant adverse impact this would be subject to a regulation 13 determination.

13 Landscape and visual

Planting around the site is managed as part of the land management activities for the site. Magnox Electric Ltd has agreed to consider a tree survey as part of these activities.

Re-cladding of reactors requires planning permission and therefore requires discussion and agreement with the local planning authority. Mitigation proposals for this and other identified effects on landscape and visual will be included in the environmental management plan.

14 Noise and vibration

All construction activity will be undertaken in accordance with British Standard 5228:1997 *Noise and vibration control on construction and open sites*[21].

Noise impacts on properties within 2 km of the site have been identified as a medium-term key significant adverse effect. Mitigation measures will be employed to reduce these impacts, including: noise barriers; use of equipment with silencers; use of a site contact; informing local residents of exceptional activities. Magnox Electric Ltd has agreed to discuss works to be undertaken outside of normal working hours and any monitoring requirements in advance with South Gloucestershire Council.

Assessment of the reduction in noise from the implementation of mitigation measures will not be possible until detailed working plans are defined, and therefore will be reported in the environmental management plan.

15 Surface water

The potential release of turbid and/or contaminated water from decommissioning activities on site for care and maintenance preparation and final site clearance is assessed as having a moderate adverse significant effect. The implementation of mitigation will render the above not significant.

16 Traffic and transport

Magnox Electric Ltd will implement a Travel Plan that will be discussed in advance with relevant authorities. Traffic volumes have been calculated on the worst-case scenario that transport during decommissioning will be by road, as the local beneficial impacts of rail and water transport were considered unlikely to be significant. Magnox Electric Ltd will consider using rail or water transport where this is viable.

Magnox Electric Ltd have proposed mitigation measures to prevent matter arising from decommissioning appearing on roads local to the station, such as wheel

washing, sheeting of vehicles. However, if any matter appeared on roads as a result of decommissioning Magnox Electric Ltd would remove the material.

ANNEX 7

Decommissioning Project Consent No.1

18 February 2008

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)

OLDBURY POWER STATION

The Health and Safety Executive, for the purposes of regulation 4(b) in accordance with regulation 8(3), grants consent for carrying out the project¹ 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 package operational intermediate level waste, and store the intermediate level waste until it can be removed from site, and clear the site, subject to the conditions under regulation 8(4) attached.

Dated:

Signed

**For and on behalf of the
Health and Safety
Executive
Dr A N Hall
A person authorised to act
in that behalf**

¹ 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)

OLDBURY POWER STATION

Condition 1

The project¹ shall commence before the expiration of five 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:

¹ 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:

Signed

**For and on behalf of the
Health and Safety
Executive
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 Magnox Electric Ltd is given here. The licensee has undertaken to implement any mitigation measures identified in the environmental statement and supporting evidence (and will be required to do so in accordance with the environmental management plan referred to in the conditions attached to the consent).

1 Air quality and climatic factors

Three major topic areas were assessed- traffic emissions; dust from on site; and dust from vehicles- for each of the three phases of decommissioning.

Within these topic areas there was one temporary impact identified as significant adverse medium-term for the care and maintenance preparations phase and final site clearance.

The impact related to an increase in dust at receptors along traffic routes. The environmental statement identified mitigation activities for control of dust from general on-site dust generating activities, such as construction and demolition, and traffic, which if implemented would render the impact as not significant.

These mitigation measures include:

- sheeting of vehicles carrying potential dusty loads;
- use of wheel and body washing where appropriate for, as a minimum, heavy goods vehicles leaving site;
- use of water sprays for external activities as appropriate;
- sheeting or seeding of surfaces and/or use of wind fences as appropriate;
- covering of containers;
- avoiding of use of unsurfaced ground; and
- cleaning of on-site roads.

2 Archaeology and cultural heritage

There are no surviving features of archaeological interest within the power station site, other than the station itself, therefore Magnox Electric Ltd felt that no further assessment was appropriate.

Oldbury currently holds a range of archived material including drawings and photographs that were recorded during construction of the power station. These were reviewed by Bristol and Region Archaeological Services (BARAS) who undertook the archaeological baseline study which has informed the environmental statement. During decommissioning, records of the site will be moved to the National Nuclear Archives centre, when it is set up.

3 Ecology

Nine topic areas were assessed for care and maintenance preparations and two topic areas for the care and maintenance phase. The impacts during final site clearance were considered to be similar to those identified in the assessment of the care and maintenance preparations phase with the absence of any of the effects associated with the removal of the tidal reservoir wall. Before final site clearance ecological surveys would be conducted to provide an up-to-date assessment.

There were five topic areas where there was found to be significant adverse effects. The five topic areas and associated impacts were as follows:

- Severn Estuary Designated Sites;
 - loss of feeding and habitat for birds during removal of the tidal reservoir wall;
 - disturbance of fish, due to noise and vibration during removal of the tidal reservoir wall;
 - dust deposition on saltmarsh;
- disturbance of peregrines;
- incidental mortality of great crested newts;
- incidental mortality of reptiles; and
- badgers, loss of foraging habitat and potential loss of setts.

However, the environmental statement identified mitigation measures relating to all of the above which if implemented will render all of the effects not significant. These mitigation measures include:

- timing of reservoir removal to avoid peak periods when significant numbers of SPA birds are present (December–February);
- the removal of the reservoir to be undertaken at low tide only;
- use of water sprays to minimise dust generation;
- use of amphibian fencing and clearing great crested newts from identified areas;
- not working within 30 m of a badger sett without a licence from Natural England;
- retention of up to 5 m foraging zones alongside hedgerows and trees for the benefit of foraging badgers;
- scattering of sea clover seed collected from site on to vegetation gaps within the foraging zones; and
- restoration using a similar mix of species to take place at the end of care and maintenance preparations.

During the care and maintenance phase significant long-term positive impacts were identified regarding the removal of the tidal reservoir wall which will return the stretch of estuary to a more natural tidally impacted habitat.

4 Geology, hydrogeology and soils

Twelve impacts were assessed for care and maintenance preparation and for final site clearance, of which one was identified as a significant benefit, one was identified as key significant adverse, five were identified as potentially key significant adverse and one was identified as potentially significant adverse.

The significantly beneficial effect would result from the remediation of contaminated ground and/or groundwater if it was required.

The significant adverse effects related to disturbance and possible mobilisation of existing ground contamination, creation of new contamination pathways, temporary storage of materials, in-fill materials effecting groundwater flow and spills or leaks.

For the care and maintenance phase, four impacts were assessed of which one was a significant benefit and two were identified as potentially key significant adverse. The beneficial effect related to the remediation of contaminated ground and/or groundwater. The potentially key significant adverse effects related to the possible creation of new contamination pathways and inadvertent contamination of soils from inappropriate uses of contaminated soils/materials as infill material.

Mitigation measures include:

- desk study and site investigations;
- controlled access to or from known or potentially contaminated working areas;
- compliance with relevant Pollution Prevention Guidelines PPG's (PPG 2[22], 6[23], 11[24] and 21[25] as appropriate);
- investigation of contaminated soils before removal of hard-standings or buildings/foundations with prior remediation if needed;
- excavation dewatering, if necessary with monitoring and appropriate management/disposal of any waters arising;
- tenting of exposed excavations, if necessary;
- compliance with British Standard 5930[26] (*Code of practice for site investigations*) and BS 10175 (*Investigation of potentially contaminated sites—Code of practice*)[27];
- compliance with the Environment Agency Technical Report P5-065 (*Technical aspects of site investigation*)[28];
- production of risk assessments, method statements and contingency plans;
- use of made ground that does not exceed average permeability of in-situ material to cause groundwater flow issues;
- placement of flow barriers and monitoring of level and flow pattern impacts, as required;
- sampling and testing of soils, wastes and materials before use, as appropriate;
- segregation of soils, wastes and materials as appropriate;
- use of containment to eliminate cross-contamination;

- management of rainwater run-off from storage areas for contaminated or potentially contaminated, soils, wastes and materials;
- authorised disposal of unsuitable soils, wastes and materials;
- improved characterisation of groundwater levels and flow direction before the start of decommissioning;
- puncture all remaining services and foundations to reduce the likelihood of ponding;
- bunding, appropriate handling protocols, contingency plans for spills;
- emergency spill response planning according to appropriate standards, including spill kits to be kept on site and trained staff available;
- use of recirculating wheel washers on HGVs leaving the site where appropriate; and
- better defined current baseline conditions for groundwater quality to provide suitable comparison to any future changes.

Implementation of the mitigation measures, as appropriate, will reduce all the impacts to non-significant.

5 Landscape and visual

The assessment concluded that in the long-term the decommissioning project will provide considerable benefit to the landscape and visual character of the area. Twenty one character areas/view locations have been assessed for visual impacts. Eight landscape attributes have been assessed. For each of the visual and landscape areas/attributes the impact and mitigation are described for the following phases: care and maintenance preparations; start of care and maintenance; 20 years into care and maintenance; and final site clearance and following final site clearance (winter).

During care and maintenance preparations views of dismantling works, modification works to the reactor and removal of the tidal reservoir from the Severn Way long-distance footpath were identified as medium-term adverse significant. Following final site clearance impacts on the views from the Severn Way are identified as very long-term beneficial key significant and significant. Views from Shepperdine Road were also identified as benefiting from a very long-term beneficial significant impact at final site clearance.

The adverse impacts would only be for a limited duration and the proximity and location of the views affected would make the provision of any additional screening impractical.

With respect to landscape attributes, very long-term beneficial significant and key significant impacts were identified following final site clearance for the Severn shoreline and estuary/Severn sands, and the setting of the Grade II listed building Jobsgreen Farm.

6 Noise and vibration

Three major topic areas were assessed for the care and maintenance preparations, care and maintenance, final site clearance and also following final site clearance.

For the care and maintenance phase, no adverse impacts have been identified, as the cessation of the care and maintenance preparations activities will have long-term beneficial impacts.

Following final site clearance, the cessation of activities on site and associated traffic will result in long-term permanent beneficial effects.

For the care and maintenance preparations and final site clearance, noise from work on site and associated changes in traffic have been identified as having possibly significant adverse impacts on residents. Until working methods are defined it is not possible to assess the noise reduction and therefore the impact significance reduction that will be achieved by mitigation measures. Mitigation measures include:

- using equipment with silencers;
- appointment of a designated site contact to whom complaints/queries regarding construction/demolition work could be directed – any complaints to be investigated;
- informing residents of exceptional activities;
- no potentially significant work outside of normal hours of work without prior agreement from local authority; and
- compliance with BS 5228[21].

Mitigation measures will be reported in the environmental management plan.

7 Socio-economic

Impacts were assessed for: care and maintenance preparations; care and maintenance; and final site clearance. Significant long-term adverse impacts were identified for one topic area: employment opportunities in immediate cluster wards, relating to long-term loss of 570 permanent staff and contractors (2.2% reduction on baseline employment level in area).

During final site clearance the employment generated represents a short-term beneficial impact for the immediate cluster of wards.

The scope for Magnox Electric Ltd to avoid or reduce the significant adverse impact for the local economy is limited. Mitigation measures will be implemented to assist individuals affected. Staff counselling will be offered to all staff to determine their future aspirations and training or support needs. There will be some limited scope for Magnox Electric Ltd to manage the reduction in staff through redeployment where opportunities exist.

Magnox Electric Ltd will encourage its contractors to make use of locally sourced labour, materials and services as far as practicable. Magnox Electric Ltd will provide its contractors with information on suitably qualified local companies capable of involvement in the decommissioning work.

8 Surface water quality and drainage

Four topic areas were assessed for the care and maintenance preparation and final site clearance phases, and one for the care and maintenance phase. The potential release of turbid and/or contaminated water from decommissioning activities on site for care and maintenance preparation and final site clearance is assessed as having a moderate adverse significant effect. However, mitigation, if implemented will render the above not significant. Mitigation measures include:

- wetting down to prevent windblown spread of dust into locations where subsequent washing into surface water drains would be likely, and appropriate management of waste water arising;
- on-site roads to be regularly kept free from mud/dust deposits, including the use of recirculation water wheel washers and road cleaners;
- sheeting or seeding of any long-term stockpiles of soil; and
- careful design and siting of spoil mounds.

During the care and maintenance preparations phase, potential minor spills and leaks of non-radioactive substances have been assessed as potentially significant adverse if they occur. Mitigation measures if implemented will render this effect not significant. Mitigation measures include:

- careful siting of concrete plant and fuel/chemical handling facilities according to the Environment Agency PPG5[29] and PPG6[23];
- oil separation facilities on the surface water drainage system at appropriate locations;
- bunding of chemical and fuel storage according to PPG2[22], PPG5[29] and PPG6[23];
- appropriate handling protocols for fuel and chemicals in line with PPG6[23] and PPG11[24]; and
- emergency/spill response planning according to PPG21[25], including spill kits kept on site and trained staff available.

9 Traffic and transport

The magnitude and impact of changes in traffic were considered. Two topic areas were considered for each of the following phases: care and maintenance preparations; care and maintenance; final site clearance; and following final site clearance. Within each topic area, 14 roads/sites were assessed.

During care and maintenance preparations and final site clearance phase, three of the 14 sites were identified as having temporary significant medium-term adverse impacts; Hill Lane, The Naite and Morton Way, due to the changes in traffic flow. One temporary key significant medium-term adverse impact was identified on one section of Foss Lane due to a major (31.1%) increase in traffic flow on a road with an accident record above the national average.

Magnox Electric Ltd have undertaken to implement a travel plan as a mitigation measure, this is intended to assist in reducing the number of trips generated by

the station throughout the entire decommissioning project. The travel plan will be discussed in advance with the relevant highway authority.

During care and maintenance and after final site clearance, key significant and significant, long-term positive effects are identified for one section of Foss Lane and Hill Lane due to the reduction in traffic during these phases.

All other roads and junctions are assessed as having no significant effects.

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GLOSSARY OF TERMS AND ABBREVIATIONS

DTI	Department of Trade and Industry, now the Department for Business, Enterprise and Regulatory Reform
EEA	European Economic Area
EIA	Environmental impact assessment
EIADR	Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations. This term is used generally in the text of this report.
EIADR99	Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999
EIADR06	Nuclear Reactors (Environmental Impact Assessment for Decommissioning) (Amendment) Regulations 2006
Euratom Treaty	Treaty establishing the European Atomic Energy Community
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 4 GBq/te of alpha or 12 GBq/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 licence
NDA	Nuclear Decommissioning Authority – formerly known as the LMA (Liabilities Management Authority) – referred to in the government White Paper, <i>Managing the Nuclear Legacy: A Strategy for Action</i> (Cm 5552, published July 2002)
NIA65	Nuclear Installations Act 1965, as amended
NII	Her Majesty's Nuclear Installations Inspectorate – part of HSE
REPIR	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 Environment Protection Agency
SSG	Site Stakeholder Group
TCPA(EIA)2000	Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2000
TCPA90	Town and Country Planning Act 1990

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