

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

Wylfa nuclear power station

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



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amended)**

A report prepared by the Health and Safety Executive

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FOREWORD

This document reports on the Health and Safety Executive's decision to grant consent for a decommissioning project at Wylfa nuclear power station to the licensee, Magnox North Ltd (formerly known as Magnox Electric Ltd), under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (as amended). Wylfa is the eighth 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, Dungeness A and Oldbury.

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 Wylfa 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 (EMP) and its subsequent revisions. Importantly, there is also a requirement for the licensee to keep the public informed of progress on a regular basis through making their EMPs 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/EC² 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 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 Wylfa nuclear power station, Magnox North Ltd, requested a pre-application opinion and provided information in a scoping report in August 2007. HSE undertook a public consultation on the scoping report and provided its pre-application opinion in November 2007. Magnox North Ltd applied to HSE for consent to carry out a decommissioning project and provided an environmental statement in August 2008. HSE undertook a public consultation on the environmental statement. Both public consultations involved around 115 individuals in 91 organisations. Following the consultation on the environmental statement, HSE was able to make a decision to grant consent to carry out a decommissioning project at Wylfa nuclear power station under the Regulations in March 2009, 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; 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 North Ltd must prepare an environmental management plan (EMP) 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 EMP 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/EEC¹ as amended by Council Directive 97/11/EC² and Council Directive 2003/35/EC³ 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 amended⁶ (TCPA(EIA)99) and the Environmental Impact Assessment (Scotland) Regulations 1999, as amended⁷ 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 EIADR* is 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/EC¹ as amended by Council Directive 97/11/EC² and Council Directive 2003/35/EC³.
- 5 The licensee of Wylfa, † Magnox North Ltd, applied to HSE for consent to carry out a decommissioning project under EIADR in August 2008.
- 6 This document reports on HSE's decision to grant consent for a decommissioning project at Wylfa. 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 North Ltd will take to control any major adverse effects of the project on the environment.

* 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.

† Wylfa refers to Wylfa 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 (HSW Act)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. The HSW Act places duties on employers and employees, established HSE, and provides for health and safety regulations. The HSW Act 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 (as amended) (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 (REPPIR)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 (EA) 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 programmes* 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 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 organisations and agencies, namely: Natural England (formerly the Countryside Agency and English Nature) and the Environment Agency in

* Arising from installations formally owned by BNFL and UKAEA.

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 statutory 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 it 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 North Ltd wrote to HSE in August 2007 to request a pre-application opinion on what the environmental statement for Wylfa should contain. Magnox North 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 September to October 2007. HSE's pre-application opinion was sent to Magnox North Ltd in November 2007. The pre-application opinion was

copied to consultees in December 2007, 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 North Ltd applied to HSE for consent to carry out a decommissioning project at Wylfa and provided an environmental statement in August 2008. HSE consulted on the environmental statement, the consultees are listed in Annex 2. In addition, Magnox North Ltd publicised the environmental statement in the local press (*Daily Post*, the *North Wales Chronicle* and the *Holyhead and Anglesey Mail*) to involve local people. HSE publicised the consultation on the environmental statement on its website, which had a direct link to Magnox North Ltd's website. Magnox North Ltd made copies available for public inspection at ten locations near the site and HSE made copies of the environmental statement available at its office nearest to the site – HSE, Unit 7 & 8 Edison Court, Ellice Way, Wrexham Technology Park, Wrexham, L13 7YT (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 November 2008. 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 further information or evidence was not necessary before it could make its decision. Annex 4 provides an explanation as to why further information was not requested for specific topics.
- 31 Copies of the environmental statement 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 March 2010).

Organisations involved in the consultation process

- 32 HSE considered the environmental statement for Wylfa. HSE's consideration included holding discussions with HSE's site inspector for Wylfa, stakeholders and also independent consultants contracted to HSE, as well as taking into account written comments received during the public consultations.
- 33 The organisations and agencies with expertise in planning and environmental matters (the consultation bodies) reviewed the environmental statement as appropriate, and HSE took into account their findings.

- 34 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

- 35 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.
- 36 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).
- 37 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.

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

- 38 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 39 to 46).
- 39 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 option selected would be subject to regulation 13 of EIADR.
- 40 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.
- 41 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. NIA65 covers other possible incidents and accidents and the licensee's emergency arrangements.

- 42 Some consultees expressed concern regarding the socio-economic impacts expected as a result of the closure of the power station. Although the scope for Magnox North Ltd to avoid or reduce the significant adverse impact for the local economy is limited, the environmental statement outlines mitigation measures to minimise the effect including assisting affected employees at the site and encouraging contractors to make use of locally sourced labour, equipment, materials and services as far as practicable.
- 43 With regard to ecology, some consultees were concerned with disturbance to breeding birds, namely black-backed and herring gull colonies. The environmental statement concluded that with the proposed mitigation measures in place there were no significant impacts on gulls and breeding birds, any change to the mitigation would be reported in the environmental management plan.
- 44 Some consultees expressed concern regarding light pollution at night. The environmental statement concluded as directional lighting will be used for any additional temporary lighting on site that there will be no significant impact on night-time views during decommissioning when compared with operational lighting.
- 45 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.
- 46 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 4 with a brief explanation of why HSE took this view.

REASONS FOR GRANTING CONSENT

Decision to grant consent

- 47 HSE granted consent to carry out a decommissioning project at Wylfa under EIADR in March 2009, and attached conditions to the Consent. A copy of the Consent and conditions is appended as Annex 5.
- 48 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;
 - 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

- 49 In HSE's view, the environmental statement and evidence provided all the information that was reasonably required and that Magnox North 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.
- 50 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 North Ltd had not foreclosed unnecessarily, at this early stage, possible appropriate approaches to the decommissioning process. In such cases, Magnox North 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)

- 51 In HSE's view, the environmental statement 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.
- 52 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 6). 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 6).
- 53 There were three areas where potential key significant, temporary key significant or key significant adverse impacts were identified. These were geology, hydrogeology and soils; landscape and visual; and traffic and transport. The geology, hydrology and soils issues related to changes in soil and/or groundwater quality from inadvertent contamination from the storage, handling or use of contaminated soils/materials; inadvertent or uncontrolled disturbance or spreading of existing contaminated soils; remediation of contaminated ground (carrying out the works) if required; mobilisation of existing contamination changes to groundwater flow; and the creation of new contamination pathways and spills or leaks. The landscape and visual issue relates to periodic additional night-time lighting and modification works to the reactor building. The traffic and transport issue relates to a temporary impact

during care and maintenance preparations and final site clearance. Magnox North 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.

- 54 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.
- 55 A short-term positive socio-economic impact was identified during final site clearance relating to the employment generated.
- 56 Further details on environmental effects and measures to control environmental effects are provided in Annex 6.

Effects on other countries

- 57 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

- 58 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 Wylfa 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 local planning authority. Temporary installations to process and/or store radioactive waste might also require environmental impact assessment under the TCPA(EIA)99.⁶ In such cases where environmental impact assessment is required the public will also be consulted before any decision is made.
- 59 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 authority.
- 60 It follows, therefore, that Magnox North 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.
- 61 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

- 62 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).

- 63 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 13 and 14).
- 64 It follows, therefore, that Magnox North 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.
- 65 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 relationship of government policy, decommissioning strategy and European initiatives to EIADR and the Wylfa environmental statement

Government policy

- 66 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. Each operator is expected to produce and maintain a decommissioning strategy and plans for its sites. The Government expects that those strategies and plans will take into account the views of stakeholders (including relevant local authorities, public and stakeholder groups). Strategies should include a comprehensive site decommissioning plan for safely carrying out the decommissioning process with due regard to security and protection of the environment. Each plan should take into account any proposed future use of the site in question. The Government also expects that operators will typically begin to refine strategies and plans, in consultation with the regulators and stakeholders before they plan to close the facilities (or first facility as appropriate).
- 67 Under the Energy Act 2004¹⁷ the Nuclear Decommissioning Authority (NDA) was established to take responsibility for securing the decommissioning and clean up of civil nuclear sites.

Decommissioning strategy review

- 68 An environmental statement under EIADR needs to describe the options for decommissioning, including decommissioning timetables.
- 69 In its draft business plan 2008/11¹⁸ 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

- 70 Regulations implementing Council Directive 2001/42/EC¹⁹ 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. 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).

Wylfa environmental statement

- 71 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, socio-economic 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.
- 72 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.
- 73 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 North Ltd must apply to HSE for a determination as to whether the project should be subjected to an environmental impact assessment. If so, Magnox North 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

- 74 HSE has attached conditions to the Consent. A copy of the Consent and conditions is appended at Annex 5. In brief, Magnox North Ltd must prepare and implement an environmental management plan (EMP) that identifies mitigation measures, describes their implementation and effectiveness, and any changes in light of experience. A copy of the EMP 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.
- 75 Regulation 16 of EIADR provides HSE with sufficient powers under the HSW Act to effectively enforce these conditions.

76 The licensee will make a copy of the EMP available for public inspection at public venues close to the site.

Reasons for the conditions

77 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

78 Condition 1 requires Magnox North 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

79 Condition 2 requires Magnox North Ltd to prepare an EMP 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

80 Condition 3 requires the EMP 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);
- 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.

81 Most of the work activities have associated mitigation measures in the environmental statement. Condition 3a requires these mitigation measures to be listed in the EMP.

82 Some future work activities have a range of options for implementation. In such cases, the options have associated mitigation measures in the environmental statement, 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.

83 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 clearance. In such cases, mitigation measures to protect wildlife would be dependent on the wildlife present at that future time. Condition 3c requires these work activities to be listed in 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

- 84 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.
- 85 Where the need for mitigation measures to control environmental impacts during the later stages of the decommissioning project has been assessed from the list of work activities compiled under condition 3c, condition 4b requires these mitigation measures to be included in the EMP, along with reasons for their selection.
- 86 Condition 4c requires the EMP to describe the effectiveness of mitigation measures taken 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

- 87 Condition 5 requires Magnox North Ltd to send the EMP and its subsequent revisions to HSE periodically. The timeframe for sending the plan to HSE is on an annual basis on the anniversary of the expiry of the 90 day period, 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.
- 88 Condition 5 also requires Magnox North 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

- 89 Condition 6 requires Magnox North 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 (AS AMENDED)

THE EXECUTIVE'S PRE-APPLICATION OPINION AS TO THE CONTENT OF THE ENVIRONMENTAL STATEMENT FOR WYLFA NUCLEAR POWER STATION

Issue

- 1) To state the Executive's pre-application opinion as to the content of the environmental statement for Wylfa Nuclear Power Station under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (EIADR99), as amended by the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) (Amendment) Regulations 2006 (EIADR06), to be referred to as 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 Wylfa 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 "Wylfa 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).
- 7) The environmental statement for Wylfa 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 evidence or 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. HSE requested consultees with detailed local knowledge and experience located near to the site to include matters of local concern. The list of consultees is given in 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 given in 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 in Appendix 1. The opinion, together with copies of consultees' comments will be displayed at the HSE's Knowledge Centre and Local Area Office 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 Wylfa Nuclear Power Station when this is provided by the licensee.

Contact

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Consultees on the scoping report

Consultation bodies

HSE consulted 5 individuals in 3 organisations

Countryside Council for Wales
Environment Agency Wales
Isle of Anglesey County Council

Other organisations

HSE consulted 54 individuals in 54 organisations

Amlwch Town Council
Anglesey Economic Regeneration Partnership
Anglesey Local Health Board
British Trust for Ornithology
Cadw
Campaign for Protection of Rural Wales
Cemaes Bay Harbour Authority
Cemaes Bay Trade & Tourism Assn
Cemaes Primary School
Civil Aviation Authority
Civil Nuclear Constabulary
Committee on Medical Aspects of Radiation in the Environment (COMARE)
Country Land & Business Association
Crown Estates
Cylch y Garn Community Council
Department for Environment, Food and Rural Affairs (DEFRA)
Department of Environment, Heritage & Local Government (Ireland)
Department of Local Government & the Environment – Isle of Man Government
Farmers' Union of Wales
Federation of Small Businesses
Food Standards Agency
Food Standards Agency (Wales)

Forestry Commission
Friends of Anglesey Red Squirrels
Friends of the Earth
Greenpeace
Health Protection Agency
Highways Agency
Holyhead Sailing Club
Llanbadrigg Community Council
Maritime and Coastal Agency
Mechell Community Council
National Farmers' Union
National Trust
Network Rail
North Wales Cruising Club
North Wales Fire & Rescue Service
North Wales Police
North Wales Wildlife Trust
North West and North Wales Sea Fisheries Committee
Nuclear Decommissioning Authority
Nuclear Free Local Authorities
Nuclear Safety Advisory Committee
Ramblers Association (Wales)
Royal Air Force Valley
Royal Anglesey Yacht Club
Royal Commission on the Ancient Monuments of Wales
Royal Society for the Protection of Birds (RSPB)
Snowdonia National Park Authority
Welsh Assembly Government / Llywodraeth Cynulliad Cymru
Welsh Federation of Fisherman's Association
Welsh Water / Dŵr Cymru
Welsh Yachting Association

Site Stakeholder Group

HSE consulted 52 individuals in 34 organisations and 14 other interested parties.

Amlwch Town Council

Anglesey County Council
Anglesey Federation of Women's Institute
Anglesey Local Health Board
Campaign for the Protection of Rural Wales
Cemaes Bay Trade & Tourism Association
County Landowners Association
Cylch y Garn Community Council
Environment Agency
Farmers' Union of Wales
Federation for Small Businesses
Food Standards Agency
Friends of the Earth Cymru
Llanbadrig Community Council
Maentwrog Power Station
Magnox North Ltd
National Assembly of Wales
National Farmers' Union
National Grid
Nuclear Decommissioning Authority
North Wales Fire Authority
North Wales Police
North West and North Wales Sea Fisheries Committee
Office of Civil Nuclear Constabulary
People against Wylfa B (PAWB)
Plaid Cymru
Trawsfynydd Power Station
University of Bangor / Prifysgol Bangor
Welsh Assembly Government / Llywodraeth Cynulliad Cymru
Welsh Development Agency
Welsh Water / Dŵr Cymru
Women's Institute
WRVS
Wylfa Power Station
14 Other members of SSG

Consultees who responded on the scoping report

HSE received 13 responses on the scoping report from 13 organisations.

Cadw

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

Countryside Council for Wales

Environment Agency

Food Standards Agency (Wales)

Health Protection Agency

Isle of Anglesey County Council

Isle of Man Government

North Wales Police

Royal Air Force Valley

Royal Society for the Protection of Birds (RSPB)

UK Highways A55 Limited

Welsh Water / Dŵr Cymru

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 describes 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, amongst other things, accidental or untoward events. Furthermore, the nature and potential for adverse environmental effects arising from possible abnormal situations during the whole decommissioning period should be identified. While it may not be possible, at this stage, to be definitive about the later stages of decommissioning, the statement should cover the strategic intention for eventual completion of decommissioning and as much detail as possible on environmental effects. Where there is uncertainty in later stages, this must be indicated. Some more detailed aspects are described below.
- 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; and,
 - 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 (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 34 of this Appendix), should be consistent with that described in Paragraph 35 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.
- 7) Consideration should be given to the monitoring of dust complaints.

Archaeology and cultural heritage

- 8) The environmental impact assessment should include adequate consideration of the impacts associated with archaeology and cultural heritage;
- 9) Consideration should be given to discussing the extent and nature of the survey to be undertaken with appropriate regulators and organisations and a summary of discussions included in the environmental statement.
- 10) Consideration should be given to providing an indication of how the effects will be monitored and including information as to how effects will be mitigated, as appropriate.

Ecology

- 11) Consideration should be given to extension of the assessment area beyond 2 km and to the inclusion of the following areas in the environmental impact assessment:
 - a. Henborth, Tre'r gof, Ynys Feurig, Skerries and Cemlyn Bay Site of Special Scientific Interest (SSSI);
 - b. Ynys Feurig, Skerries and Cemlyn Bay Special Protection Area (SPA); and
 - c. Ynys Feurig, Skerries and Cemlyn Bay Special Area of Conservation (SAC).

HSE would expect such an assessment to include (where relevant) consideration of air quality and dust, noise and vibration, lighting, surface waters and geology, hydrogeology and soils (including groundwater impacts) on ecological receptors.

- 12) 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 bats, badgers, otters, water voles and invertebrates, reptiles and amphibians;
 - c. Determining whether protected and other plant species are present in the assessment area and if so, including in the assessment;
 - d. Assessing patterns of breeding, feeding and roosting of birds within the site itself and within 2 km around the site boundary;
 - e. Assessing whether protected and other species of birds are present, for example choughs, barn owls, yellowhammers and tree sparrows; mallard, teal, goldeneye, shoveller, wigeon, tufted and long tailed duck; and,

- f. Determining whether hedgerows or other semi-natural vegetation present in the assessment area qualify as 'important' under the Hedgerow Regulations 1997.

13) 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 areas of heathland, shoreline habitats, wet woodland and wet grassland adjoining Wylfa power station;
- c. Where relevant 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 (e.g. noise and visual disturbance) 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; and,
- e. Demonstrating a commitment to agree surveys and mitigation measures with relevant regulators and organisations when and if appropriate.

14) Consideration should be given to assessing the impact of changes in, or cessation of, abstractions and discharges via the cooling water system* and works to remove related structures, for example on coastal processes. In particular, consideration should be given to the effects on:

- a. Removal of off-shore structures on marine flora and fauna, including disturbance due to work activities; and,
- b. Loss of habitat of any off-shore structure used by birds.

15) 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.

* 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.

Geology, Hydrogeology and soils

- 16) The site geology and hydrogeology should be described and consideration should be given to:
- a. Providing baseline information for contaminated material on- (and if relevant off-) site and where necessary include soil and well water analysis;
 - b. Identification of all potential sources and pathways of contamination (HSE recognises that the licensee has indicated that this will be included in the assessment);
 - c. Assessing the effects of temporary storage of waste (contaminated or non contaminated) on soils and hydrogeology; and,
 - d. Impact of decommissioning on public water supplies.

Landscape and visual

- 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;
 - b. Consider the effects of changes in lighting on pedestrians and mariners; and,
 - c. Consider the visual effects of changes to on-site structures on water navigation.

Noise and vibration

- 18) The licensee must consult with the appropriate council regarding noise and vibration. (HSE recognises that the licensee has indicated that it intends to consult with the Isle of Anglesey County Council).
- 19) Consideration should be given to the monitoring of noise complaints.
- 20) Consideration should be given to:
- a. Providing baseline data for on-site and off-site noise levels at the most sensitive receptors;
 - b. Consideration should be given to the noise and vibration effects along local roads; and,

- c. Consideration should be given to ecological and other effects of transient sources of noise e.g. during demolition the noise and vibration may have an effect on migration runs of fish.

Socio-economic

- 21) Consideration should be given to assessing the direct and indirect socio-economic impact of the decommissioning project.

Surface waters

- 22) Consideration should be given to referring to Department for Transport Guidance* when evaluating any highway related impacts on surface waters (for example the effects of highway runoff on pollution).
- 23) Consideration should be given to assessing the effect of the site's activities on the coast and coastal habitats (including coastal processes),

Traffic and transport

- 24) Consideration should be given to:
 - a. Discussing road maintenance requirements with the relevant highway authority;
 - b. Discussing special arrangements that may be required for the transport of large/heavy loads, and contingency plans in the event of an incident, especially over the Britannia Bridge with the relevant authorities;
 - c. Including assessment of traffic related pedestrian and cyclist safety;
 - d. Assessing the impact of the project on relevant parts of the road and if appropriate, rail network;
 - e. Assessing the impact of the project on the Menai Suspension Bridge and the Britannia Bridge;
 - f. Cumulative impacts unrelated to the decommissioning project e.g. proposed building works at RAF Valley;
 - g. 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);

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

- h. Assessing the effects of any proposed physical alterations to road junctions or general carriageway alignments on noise levels and air quality;
 - i. Implementing a Green Travel Plan (for example to discourage single car occupancy by commuters); and,
 - j. Further assessing the options of road, water and/or rail transport.
- 25) 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.
- 26) Consideration should be given to the effects on water navigation and recreational boating in the area, caused by removal of cooling water intake and outfall structures. This includes notices to Mariners to be issued, setting out the details of the operation.

Civil engineering works and secondary developments

- 27) 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/handling 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/handling facility; and,
 - c. Providing a clear indication of any ancillary buildings or facilities that are likely to be required during the decommissioning project.
- 28) Consideration should be given to providing information on the programme of other civil engineering works, which are to be undertaken on site during the project. 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

29) 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;
- c. 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;
- d. Scoping the environmental effects of the options proposed for the storage of intermediate level waste;
- e. Providing an indication of the amount of radioactive waste that will need to be stored on site; and,
- f. 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.

Treatment of non-radioactive wastes

30) 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 on the management of hazardous wastes e.g. asbestos together with reference to the legislation which covers such matters;
- d. Providing estimates of the quantities of demolition waste and likely disposal routes, including an indication of the amounts of wastes to be retained on site, used in landscaping and infill;
- e. An estimation of void space created from the removal of various structures and buildings;
- f. Providing information regarding the potential for recycling of waste materials;

- g. Summarising the processing of waste materials within the waste management facility; and,
- h. Identifying potential discharges arising from waste treatment processes.

Impact assessment methodology

- 31) The environment statement should include details of the methodology used to carry out any of the investigations or surveys.

Baseline

- 32) Consideration should be given to whether, in fact, a generic baseline year is required across all topic areas. Valid data on the specific environmental impacts associated with the site prior to changes taking place are required; however, these may be from various points in time providing they are representative.

Resource use

- 33) Consideration should be given to providing an estimate on the amount of water that will need to be supplied for the project and whether the existing infrastructure arrangements are adequate.

Issues covered by other legislation

- 34) A number of issues are covered by existing legislation, and these will continue to be enforced. 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. Exposure to ionising radiation;
- j. Integrity of flood defenses;
- k. Release of radioactive material and non-radioactive wastes; and,
- l. Secondary developments and re-cladding of reactor building.

35) 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 different stages of the project to demonstrate the effectiveness of the measures taken or to identify the need for measures to be reviewed and amended;

 - b) Using the 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 details of engagement with relevant stakeholders that have or will be approached for information e.g. statutory consultees, environmental organisations, members of the public;

 - f) 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;

 - g) Providing a clear indication as to whether the project is likely to have significant effects on the environment of another European Economic Area State;

- h) Ensuring that the policy framework described includes up to date information regarding any relevant central government policy;
- i) Ensuring that potential benefits to the environment arising from the decommissioning project are adequately addressed; and,
- j) Using photographs, photomontage, figures and diagrams where appropriate to clarify text. Examples of such include:
 - i) Use of maps showing location of the site;
 - ii) Use of photomontage to demonstrate the phased demolition of structures;
 - iii) A map showing the locations of off-site noise monitoring locations; and,
 - iv) Indication of facilities, such as footpaths, on diagrams showing the identified Zones of Visual Influence.

HSE Knowledge Centre and Local Area Office

Health and Safety Executive
Knowledge Centre
Redgrave Court
Merton Road
Bootle
L20 7HS

Telephone: 0151 951 4382
E-mail: knowledgecentre@hse.gsi.gov.uk

Health & Safety Executive
Knowledge Centre
Wrexham Area Office
Unit 7&8 Edison Court
Ellice Way
Wrexham Technology Park
Wrexham
LL13 7YT

Telephone: 01978 316001

Public libraries displaying the Pre-Application Opinion

Amlwch Library

Lon Parys

Amlwch

LL68 9EA

01407 830145

Bangor Public Library

Fford Gwynedd

Bangor

Gwynedd

LL57 1DR

01248 353479

Holyhead Library

Newry Fields

Holyhead

LL65 1LA

01407 762917

Menai Bridge Library

Wood Street

Menai Bridge

LL59 5AS

01248 712706

Caernarfon Library

Pavillion Road

Caernarfon

Gwynedd

LL55 1AS

01286 675944

Beaumaris Library
David Hughes Community Centre
Beaumaris
LL58 8AL
01248 810659

Cemaes Bay Library
Glascoed Road
Cemaes Bay
LL67 0HN
01407 711025

Llangefni Library
Lon-y-Felin
Llangefni
LL77 7RT
01248 752095

Moelfre Library
Y Ganolfan
Moelfre
LL72 8HA
01248 410331

Rhosneigr Library
High Street
Rhosneigr
LL64 5UX
01407 811 293

Annex 2 Consultees on the environmental statement

Consultation bodies

HSE consulted three individuals in three organisations:

Countryside Council for Wales
Environment Agency Wales
Isle of Anglesey County Council

Other organisations

HSE consulted 55 individuals in 55 organisations:

Amlwch Town Council
Anglesey Economic Regeneration Partnership
Anglesey Local Health Board
British Trust for Ornithology
Cadw
Campaign for the Protection of Rural Wales
Cemaes Bay Harbour Authority
Cemaes Bay Trade and Tourism Association
Cemaes Primary School
Civil Aviation Authority
Civil Nuclear Constabulary
Committee on Medical Aspects of Radiation in the Environment (COMARE)
Country Land & Business Association
Cylch y Garn Community Council
Department for Environment, Food and Rural Affairs (DEFRA)
Department of Environment, Heritage and Local Government (Ireland)
Department of Local Government and the Environment (Isle of Man Government)
Farmers' Union of Wales
Federation of Small Businesses
Food Standards Agency
Forestry Commission
Friends of Anglesey Red Squirrels
Friends of the Earth

Greenpeace
Health Protection Agency
Highways Agency
Holyhead Sailing Club
Llanbadrig Community Council
Maentwrog Power Station
Maritime and Coastal Agency
Mechell Community Council
National Farmers' Union
National Grid
National Trust
Network Rail
North Wales Cruising Club
North Wales Fire and Rescue Service
North Wales Police
North Wales Wildlife Trust
North Western & North Wales Sea Fisheries Committee
Nuclear Decommissioning Authority
Nuclear Free Local Authorities
Nuclear Safety Advisory Committee
People Against Wylfa B (PAWB)
Ramblers Association (Wales)
Royal Air Force (RAF) Valley
Royal Anglesey Yacht Club
Royal Commission on the Ancient and Historical Monuments of Wales
Royal Society for the Protection of Birds
Snowdonia National Park Authority
The Crown Estate
Welsh Assembly Government / Llywodraeth Cynulliad Cymru
Welsh Federation of Fisherman's Associations
Welsh Water / Dŵr Cymru
Welsh Yachting Association

Site Stakeholder Group (SSG)

HSE consulted 55 individuals in 30 organisations and two members of the public:

Amlwch Rural
Amlwch Town Council
Anglesey County Safety Office
Anglesey Federation of Women's Institutes
Anglesey Local Health Board
Campaign for the Protection of Rural Wales
Cemaes Bay Trade & Tourism Association
Communities First
County Landowners Association
Environment Agency
Farmers' Union of Wales
Federation for Small Businesses
Food Standards Agency
Isle of Anglesey County Council
Llanbadrig Community Council
Mechell Community Council
Mon a Menai Project
National Assembly of Wales
National Farmers' Union
Nuclear Decommissioning Authority
North Wales Fire and Rescue Authority
North Wales Police
North Western and North Wales Sea Fisheries Committee
Plaid Cymru
Trawsfynydd Power Station
University of Bangor / Prifysgol Bangor
Welsh Assembly Government / Llywodraeth Cynulliad Cymru
Welsh Water (Dŵr Cymru)
WRVS
Wylfa Power Station

16 other members of the SSG

2 members of the public

Annex 3 Consultees who responded on the environmental statement

HSE received 16 responses on the environmental statement from 16 organisations and one member of the public:

British Astronomical Association

Cadw

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

Countryside Council for Wales

Department of Environment, Heritage and Local Government (Ireland)

Environment Agency Wales

Food Standards Agency

Health Protection Agency

Isle of Anglesey County Council

Isle of Man Government

National Trust

People Against Wylfa B (PAWB)

Royal Society for the Protection of Birds (RSPB)

Site Stakeholder Group (SSG)

The Crown Estate

Welsh Anti Nuclear Alliance

A member of the public

Annex 4 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 Stakeholder engagement

Magnox North 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 North Ltd will continue to liaise with Isle of Anglesey County 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 North 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.

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 Agency 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 end states. If an alternative end use for the Wylfa site, or part of the Wylfa site, resulted in a change to the decommissioning project as currently described, then regulation 13 of 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 spoil and dusty loads; use of water sprays for demolition and infill activities; 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.

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. The industrial heritage of the site is recognised by Magnox North Ltd and consultations will be held with Cadw and the NDA regarding the Royal Commission on the Ancient and Historical Monuments of Wales survey at Wylfa power station.

Historical and decommissioning records material will be transferred to NDA's National Nuclear Archive during decommissioning when it becomes available.

10 Cumulative effects

Magnox North Ltd considered a number of approved or proposed projects in relation to cumulative effects: a business park (business and industrial) outside Holyhead; onshore liquefied natural gas landing facilities at Amlwch; a mixed-use business park (retail, office and leisure) near the Britannia Bridge; and a development of around 180 dwelling units in Llangefni. Due to the small to medium scale of these projects and the rural nature of the Isle of Anglesey, the cumulative impacts associated with the decommissioning of Wylfa were not considered to be significant.

Magnox North Ltd considered the proposed military training base development at RAF Valley, which has the potential to load additional traffic on to the A55 to and from Anglesey. The location of the power station site, the different routes used to access the sites and that the power station traffic flows during decommissioning

should be reduced when compared to the baseline scenario, mean that the cumulative impacts associated with the RAF Valley development are not considered to be significant.

Magnox North Ltd considered the cumulative socio-economic impacts of Anglesey Aluminium Metal Limited (AAM) and its potential closure and concluded that due to its high dependency on Wylfa for energy at a fixed rate, the decommissioning of Wylfa and subsequent increase in AAM's cost base due to higher transmission charges of taking energy from the National Grid could make aluminium production uneconomic. Subsequent to this assessment, in January 2009 AAM announced that they propose to close the Holyhead smelter in September 2009 when the fixed-price energy supply contract comes to an end and before Wylfa commences its closure. Employment at AAM accounts for over 10% of all employment in west Anglesey. The cumulative effect on employment within the study area of both Wylfa and AAM closing would be the loss of 1402 direct jobs, equivalent to a reduction from the baseline employment of 7.03% and is considered to be a significant adverse effect.

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

11 Ecology

Disturbance to breeding birds, and black-backed gull and herring gull colonies: Magnox North Ltd will ensure the extent of Laydown Area 1, that is adjacent to the gull colonies, will be restricted to within the outer security fence and will avoid decommissioning works that could potentially disturb the gulls and other birds during the bird breeding season.

Ecological enhancement: Wylfa has a Biodiversity Action Plan (BAP) that aims to maintain and enhance the environment for wildlife through the improvement of habitats around the site. This BAP is regularly updated and will continue to be implemented throughout the decommissioning project.

Botanical and habitat surveys identified significant impacts for the coastal cliffs, Tre'r Gof Site of Special Scientific Interest (SSSI), adders, terns, breeding birds, gulls, cetaceans, seals and bats. Magnox North Ltd has set out mitigation strategies in the environmental statement that if implemented render all the identified impacts not significant. For further details on the proposed mitigation measures please refer to Annex 6, point 3.

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 under regulation 13 of EIADR on whether an EIA is required.

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. For further details on the proposed mitigation measures please refer to Annex 6, point 4.

13 Landscape and visual

The outfall gatehouse complex and outfall weir will be demolished down to ground level, all below-ground voids backfilled and a 'natural' shoreline revetment will be re-established.

Reducing the height of the reactor building could be achieved for a substantial cost and would require complex machinery and systems to ensure the reactor building remained weatherproof. These would have additional hazards and risks for workers and the environment. Only a short- to medium-term beneficial visual impact would be achieved from any reduction in building height, as this would need to be raised again during final site clearance to allow final decommissioning of the reactor building. 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 5228:2009 *Code of practice for noise and vibration control on construction and open sites*.²⁰

Noise impacts on properties within 2 km of the site have been identified as a medium-term 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; and informing local residents of exceptional activities. Magnox North Ltd has agreed to discuss works to be undertaken outside of normal working hours and any monitoring requirements in advance with Isle of Anglesey County 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. For further details on the proposed mitigation measures please refer to Annex 6, point 8.

16 Traffic and transport

The assessment assumed that the transport of goods, materials and waste would be entirely by road transport. This is because the use of rail or water based transport would only have limited beneficial impacts locally as an alternative to road transport; would depend on the availability or construction of suitable facilities close to source and destination points; and may still require the transportation of materials at the start/end of each trip by road. In addition because local suppliers/disposal facilities and contractors will be used wherever possible, Magnox considers that the use of water-transport is unlikely to be appropriate.

Traffic volumes have been calculated on the worst-case scenario that transport during decommissioning will be by road. Magnox North Ltd will implement a Travel Plan that will be discussed in advance with the relevant highway authority and the Isle of Anglesey County Council.

Magnox North 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 this does occur as a result of decommissioning Magnox North Ltd will remove the material.

17 Light pollution

Magnox North Ltd will ensure that directional lighting will be used to minimise surplus light pollution arising from any additional temporary lighting during the decommissioning of the power station. This mitigation measure will ensure there will be no significant impacts on night-time views during any of the decommissioning stages when compared to operational lighting.

18 Removal/demolition of offshore structures

Prior to the removal of offshore structures such as the jetty, Magnox North Ltd will consult with The Crown Estate, Countryside Council for Wales and the Isle of Anglesey County Council in advance of the decommissioning works for such structures.

19 Socio economic

Significant adverse social and economic impacts are expected as a result of the closure of the Wylfa nuclear power station. The scope for Magnox North Ltd to avoid or reduce the significant adverse impact for the local economy is limited. Mitigation measures will be implemented by Magnox North Ltd to assist affected individuals who have been employed directly at the site, including staff counselling, training and support, with some limited scope for redeployment where opportunities exist. Magnox North Ltd will also encourage its contractors to make use of locally sourced labour, equipment, materials and services as far as practicable.

ANNEX 5

Decommissioning Project Consent No.1

25 March 2009

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

CONSENT

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

WYLFA POWER STATION

The Health and Safety Executive, pursuant to an application under the Regulations for consent to carry out the project* under regulation 4(a) and in accordance with the requirements of regulation 8(3) and subject to conditions attached under regulation 8(4) grants consent for the project under regulation 4(b), as follows:

- (i) to remove all buildings except the reactor buildings;
- (ii) to alter the reactor buildings for a period of deferment;
- (iii) to retrieve and package operational intermediate level waste, and to store that intermediate level waste until it can be removed from site; and
- (iv) to 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**

* Project as defined in regulation 2

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

CONDITIONS

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

WYLFA POWER STATION

Condition 1

The project* 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) the environmental management plan shall:

- a. list the mitigation measures that are already identified 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; and
- 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:

- a. with reference to condition 3b, identify the mitigation measures for options that have been selected, giving reasons for their selection;

* Project as defined in regulation 2

- 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 taken over time; and
- 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 on each anniversary of the of the expiry of this 90 day period or within such longer time as the Executive may agree, the licensee shall provide an updated environmental management plan;
- 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 6 Summary of environmental benefits and detriments and mitigation measures

A summary of the benefits and detriments of the environmental impacts identified by Magnox North 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 off-site vehicles along haulage routes which if implemented would render the impact as not significant. These mitigation measures as outlined in the environmental statement include:

- ensuring that materials are transported appropriately eg sheeting vehicles carrying spoil and potentially dusty loads;
- regular cleaning of the site entrance;
- using wheel and body washing where appropriate for heavy goods vehicles leaving site;
- using water sprays for external activities as appropriate;
- sheeting or seeding of surfaces and/or using wind fences as appropriate;
- covering containers;
- avoiding the use of unsurfaced ground; and
- cleaning 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 North Ltd felt that no further assessment was appropriate.

Certain features of the historic landscape have the potential to have survived the disturbance of construction within the immediate vicinity of the power station, including the area of car parking and overflow car parking between Porth y Pistyll and Porth y Gwartheg and in the vicinity of the outflow at Porth Wnal and within the wider NDA landholding. Magnox North Ltd have stated in the environmental statement that a walkover survey to identify any surface evidence of previous occupation and land use, including agricultural, industrial, maritime and wartime

operations, which will be undertaken before commencing any decommissioning works.

The significance of the industrial heritage was recognised by Magnox North Ltd and consultations will take place before decommissioning with Cadw and NDA regarding the Royal Commission on the Ancient and Historical Monuments of Wales survey at Wylfa power station. During decommissioning, historical and decommissioning records of the site will be moved to the NDA National Nuclear Archives centre, when it is commissioned.

3 Ecology

Nineteen topic areas were assessed for care and maintenance preparations. The impacts during final site clearance were considered to be similar to those identified in the assessment of the care and maintenance preparations phase. Before final site clearance work commences, ecological surveys would be conducted to provide an up-to-date assessment.

There were 15 topic areas where there was found to be significant adverse effects during the care and maintenance preparations period. In the absence of mitigation, the following significant adverse impacts were identified:

- disturbance to or loss of small amounts of coastal cliff grassland and strandline vegetation by use of Laydown Areas 1 and 2;
- loss of or disturbance to habitat of moderate botanical interest in Laydown Area 2;
- disruption of the adjacent cliff habitat complexes by fragmentation of the coastal wildlife corridor due to extension of laydown area onto the cliff;
- potential degradation of species-rich vegetation on the Area of Outstanding Natural Beauty (AONB) and Heritage Coast and in the Tre'r Gof SSSI caused by deposition of dust generated from demolition activities on site;
- accidental killing of adders during demolition of the town's water tank;
- disturbance to all bird species, including terns and gulls, from construction of a coffer dam, demolition of the outfall gatehouse complex and explosive demolition of the offshore cooling water jetty and offshore seawater intake structures;
- loss of habitat and increased disturbance could cause severe disruption to the gull colony in Laydown Area 1;
- potential loss of habitat and/or buildings could impact breeding birds, including loss of nests, eggs and dependent young;
- the loss of Building 99 which supports a roost of common pipistrelle bats and the loss of other buildings with moderate or high potential to support roosting bats and subsequent loss of potential and actual roost sites;
- disturbance to foraging bats from light spill; and

- disturbance to cetaceans and grey seals from explosive demolition of the cooling water jetty and offshore seawater intake structures.

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:

- use of buffer strips;
- restriction of Laydown Area 1 to within the outer security fence;
- use of dust control measures including use of water sprays;
- use of reptile-proof fencing and removal of reptiles within the work area of town's water tank and reinstatement of suitable adder habitat on the footprint of the former town's water tank;
- demolition of the coffer dam and outfall gatehouse complex conducted outside the bird breeding season;
- explosive demolition of the offshore cooling water jetty and offshore seawater intake structures works to be conducted outside the bird breeding and passage seasons (March to September), at low tide and a dedicated observer to ensure that no seals or cetaceans are seen in the area at least 30 minutes before demolition;
- all suitable nesting habitats to be removed outside bird breeding season or if not possible nests checked by qualified ecologist and works suspended if birds breeding;
- buildings supporting nesting birds demolished outside bird breeding season;
- directional lighting used, and after-dark work minimised and confined to winter;
- demolition of Building 99 under European Protected Species (EPS) licence guaranteeing safe exclusion and provision of alternative roost site for bats;
- all buildings with moderate to high potential to support roosting bats surveyed two years before demolition and mitigation for found roosts to be agreed and licensed by Countryside Council for Wales; and
- demolition of buildings where no bats are found to be carried out under a watching brief supervised by a suitably qualified and experienced ecologist; roosts suitable for summer and winter use to be provided before any demolition work commencing and as agreed with the Countryside Council for Wales.

Although no significant adverse impacts were identified for the care and maintenance phase, there may be beneficial impacts due to the likely colonisation of the site by valued ecological receptors. This benefit was assessed as a moderate but not significant impact.

4 Geology, hydrogeology and soils

Seventeen impacts were assessed for care and maintenance preparation phase and these were also considered to be similar for final site clearance. Of the identified impacts:

- two were identified as significant benefit;
- three were identified as key significant adverse;
- three were identified as potentially key significant adverse;
- three identified as up to key significant adverse;
- one was identified as significant adverse; and
- one was identified as up to significant adverse.

The two significantly beneficial effects identified would result from the remediation of contaminated ground and/or groundwater (impacts following completion of the remediation works) if it were required.

The up to key significant adverse effects, potentially key significant adverse effects and key significant adverse effects related to changes in soil and/or groundwater quality from inadvertent contamination from the storage, handling or use of contaminated soils/materials; inadvertent or uncontrolled disturbance or spreading of existing contaminated soils; remediation of contaminated ground (carrying out the works) if required; mobilisation of existing contamination changes to groundwater flow; and the creation of new contamination pathways and spills or leaks.

The significant adverse effect related to the degradation of construction materials due to high levels of sulphate in soil or groundwater and unforeseen geotechnical and contamination issues from the construction of new buildings on site. The up to significant adverse effect related to inadvertent effects on groundwater level, flow and quality due to infill and breaching of deep basements to prevent ponding.

One beneficial and four adverse significant impacts were identified during the care and maintenance phase as ongoing impacts as a consequence of tasks that are performed in the care and maintenance preparation phase. These effects related to remediation of contaminated ground and/or groundwater (beneficial); mobilisation of existing contamination; creation of new contamination pathways; inadvertent contamination of soils and/or groundwater due to use of inappropriate infill materials; and effects on groundwater flow and quality due to infill of deep basements. Mitigation measures include:

- desk study, site investigations, monitoring, remediation (where appropriate) and production of risk assessments, method statements and contingency plans before works commence so that appropriate work practices can be adopted from the outset;
- controlled access to or from known or potentially contaminated working areas;

- compliance with relevant Pollution Prevention Guidelines and Environment Agency technical reports;
- 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 BS 5930 *Code of practice for site investigations*²¹ and BS 10175 *Investigation of potentially contaminated sites. Code of practice*;²²
- sampling and testing of soils, wastes and materials before use, as appropriate;
- use of a Site Waste Management Plan;
- on-site sorting and segregation of soils, wastes and materials as appropriate;
- management of rainwater run-off from storage areas for contaminated or potentially contaminated, soils, wastes and materials;
- puncture all remaining services and foundations to reduce the likelihood of ponding;
- bunding, appropriate handling protocols, contingency plans for spills;
- sulphate testing and appropriate grade of concrete used in areas where concrete is to be placed
- dust control mitigation measures including use of water sprays with appropriate management of arising wastewater and on-site road cleaning;
- use of recirculating wheel washers on heavy goods vehicles (HGVs) leaving the site where appropriate; and

Implementation of these and other mitigation measures as detailed in the environmental statement 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-seven 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; final site clearance; and following final site clearance (winter).

During care and maintenance preparations views from a number of view points, including those located within the AONB, Isle of Anglesey and Wylfa Head coastal paths of the dismantling works and periodic additional night-time lighting and modification works to the reactor were identified as medium-term adverse

key significant and significant. Following final site clearance impacts on the views from the Mynydd y Garn, Isle of Anglesey and Wylfa Head coastal paths and from within the AONB, are identified as very long-term beneficial key significant and significant. 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, no significant adverse impacts were identified. Following final site clearance, very long-term beneficial significant impacts were identified for the built environment at the Wylfa site and the setting of the listed buildings at Cafnan Mill.

6 Noise and vibration

Two major topic areas were assessed for care and maintenance preparations, care and maintenance, final site clearance and 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.

During the care and maintenance preparations and final site clearance, traffic noise and vibration due to increased traffic on main road network were identified as having no significant adverse impact. Direct noise from work on site was identified as having up to significant adverse impacts on residents. However, until working methods are defined it is not possible to assess the noise reduction and therefore the significance of the reduction in impact 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 parts 1 and 2 of BS 5228.²⁰

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. During care and maintenance preparations, a significant short-term adverse impact was identified, with increased unemployment levels for permanent staff and contractors in the study area. Significant long-term adverse impacts were identified for two topic areas: direct employment opportunities in the immediate cluster of wards, relating to long-term loss of 750 permanent staff and contractors (3.86% reduction on baseline employment level in the study area and 35.24 % reduction in Anglesey North), with significant short-term beneficial impacts identified for temporary contractors in the study area.

During final site clearance the employment opportunities generated and small reduction in unemployment level represent significant short-term beneficial impacts for the immediate cluster of wards.

The scope for Magnox North Ltd to avoid or reduce the significant adverse impact for the local economy is limited. Mitigation measures will be implemented to assist individuals affected, including training and counseling will be offered to all staff. There will be some limited scope for Magnox North Ltd to manage the reduction in staff through redeployment where opportunities exist.

Magnox North Ltd will encourage its contractors to make use of locally sourced labour, equipment, materials and services as far as practicable. Magnox North 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

Five topic areas were assessed for the care and maintenance preparation phase and these were considered to be similar for final site clearance. One topic area was assessed 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 measures will be implemented in accordance with the Environment Agency's guidelines that will render the above not significant. The 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;
- use of sediment barriers to contain run-off, sustainable drainage concepts to control the sediment content of surface water drainage, cut-off ditches to prevent water from entering excavations;
- ensuring there is provision for dealing with silty water;
- sheeting or seeding of any long-term stockpiles of soil; and

- careful design and siting of spoil mounds.

During the care and maintenance preparations and final site clearance phases, potential minor spills or leaks of non-radioactive substances were assessed as potentially having a significant adverse impact if they occur. Mitigation measures if implemented will render this effect not significant. Mitigation measures include:

- careful siting of concrete plant and bunded fuel/chemical handling and storage facilities according to the Environment Agency guidance;
- appropriate handling protocols to minimise the risk of spills of concrete, cement, fuel, oils and other chemicals in line with Environment Agency guidance; and
- emergency/spill response planning according to Environment Agency guidance 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, four roads/sites were assessed.

During care and maintenance preparations phase, two of the roads/sites were identified as having a temporary significant medium-term adverse safety impact: A5025 north and south of the power station, due to the changes in traffic flow. During care and maintenance preparations and final site clearance phases, one temporary key significant medium-term adverse impact was identified on the A5025 south of the power station due to a major (> 50%) increase in HGV flow on the road.

Magnox North Ltd has undertaken to implement a Travel Plan as a mitigation measure; this is intended to help reduce 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 and the Isle of Anglesey County Council.

During care and maintenance and after final site clearance, significant, long-term positive effects were identified for the A5025 north and south of the power station 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

AONB Area of Outstanding Natural Beauty.

DEFRA Department for Environment, Food and Rural Affairs.

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.

EMP Environmental Management Plan.

EPS European Protected Species.

Euratom Treaty treaty establishing the European Atomic Energy Community.

FSA Food Standards Agency.

HSE Health and Safety Executive.

HSW Act 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.

LLW low-level waste.

NDA Nuclear Decommissioning Authority (formerly known as the LMA (Liabilities Management Authority)). Referred to in the government White Paper *Managing the Nuclear Legacy: A Strategy for Action* Cm 5552 July 2002.

NIA65 Nuclear Installations Act 1965, as amended.

NII Her Majesty's Nuclear Installations Inspectorate – part of HSE.

PPG Pollution Prevention Guidelines.

REPPIR Radiation (Emergency Preparedness and Public Information) Regulations 2001.

RSA93 Radioactive Substances Act 1993.

safestore preservation of reactor buildings, their contents, and other structures on the site to facilitate an extended delay period before dismantling.

SEA Strategic Environmental Assessment.

SEPA Scottish Environment Protection Agency.

SSG Site Stakeholder Group.

TCPA(EIA)99 Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (as amended).

TCPA90 Town and Country Planning Act 1990.

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

Wylfa nuclear power station

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



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