

SSA Nominations
Bay 128
Department of Energy and Climate Change
1 Victoria Street
London
SW1H 0ET

Your ref
Our ref 090326 DECC BL
Name Alan Smith
Phone 01793 892065
E-Mail alan.smith@rwenpower.com

26 March 2009

CNPO Support Letter for Nuclear New Build at Braystones

Dear Sir/Madam

This letter is intended to fulfil the requirement for a CNPO to support the nomination of the Braystones site and surrounding land into the SSA process.

In its publication inviting nominations under the SSA, the Government defined a CNPO as one which currently operates a nuclear power plant anywhere in the world; and currently operates an electricity generating station subject to UK health, safety and environmental regulation.

This letter presents RWE npower's credentials as a CNPO in the context of its support for the nomination of sites into the Government's SSA process.

RWE npower, a wholly owned subsidiary of RWE AG, is an integrated energy business, generating electricity and supplying gas, electricity and related services to customers across the UK. We own and operate one of the largest and most diverse portfolios of power generating plant in the UK including over 10 GW of large gas, coal and oil-fired power stations and cogeneration plant.

RWE npower is committed to the development of new nuclear build and plans to invest in, develop and operate new nuclear power stations in the UK. Our status as a CNPO has already been recognised by the Government as an acknowledged supporter of the candidate reactor designs, including Areva's EPR and Westinghouse's AP1000, currently going through the Generic Design Assessment Process.

The Braystones site is of sufficient size to accommodate the construction of at least one power station of either of the above technologies, and is viewed as a technically suitable site. RWE npower already has a grid connection agreement for 3.6GW to export power from the site. Accordingly, a new nuclear power station is capable of being deployed at Braystones before 2025.

RWE currently operates five nuclear reactors located across three sites in Germany. Together the company's nuclear plant generates 25 per cent of the annual power produced by its German power station fleet. RWE has more than 45 years' experience of operating nuclear plant, and managing waste, to the highest safety standards.

Our nuclear stations have served as reference plants for national research and development projects, including research into best practice in the management of

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I www.rwenpower.com

Registered office:
RWE npower plc
Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire SN5 6PB

Registered in England
and Wales no. 3592782

safety and risk. The company's record in nuclear operations is recognised world-wide and RWE is an active member of a number of international associations working to improve and enhance the nuclear generation industry.

RWE has the financial strength and partnering experience we believe is essential to develop new nuclear build. RWE Group's external revenue for the 2008 financial year was €49 billion, EBITDA was €8.3 billion and its operating result €6.8 billion. At the end of 2008 the Group's workforce numbered 65,908 employees. RWE has an excellent, proven track record of partnering with other companies both in the UK and internationally. In Germany, we have substantial joint ventures with E.ON on three of our nuclear power plant units and with Steag, Vattenfall Europe and E.ON on two of our coal-fired power stations. This is complemented by our established UK power station technical and project management competences and our recent experience of consenting and planning major coastal site and inland power stations.

In short, RWE npower has demonstrable capability to finance, engineer, plan, procure and construct a nuclear power station, and to licence and operate it within the UK's health and safety, security and environmental regulatory regime.

Should the Government require further information about RWE or this letter of support, please contact myself in the first instance.

Yours Sincerely,

Alan Smith
Project Manager
UK Nuclear Development Team
RWE npower
Windmill Hill Business Park
Whitehill Way
Swindon
SN5 6PB

Supplementary information

Statement to support section A4 on Community Awareness Raising

1. Introduction

This supplementary information contains details on the range of activities carried out to raise awareness for the nomination of land at Braystones among a number of key audiences, as required by section A4 of the Government's nomination form and the associated guidance. Methods utilised included; face to face meetings, direct communication, paid for advertising, media relations and public drop-in sessions. These have been supported by a phone information line, facts leaflet, email address and references as required to Government information.

2. Criterion

In relation to the Government's SSA process the criterion in section A4 requires that a statement is included within the nomination to set out the steps that have been taken to raise awareness of the nomination with local communities living in the vicinity of the site, including landowners. For the purposes of the nomination, this supplementary section provides this statement.

Specifically, the SSA guidance sets out that before a site nomination is made, a nominator (or a third party) should have:-

- made the local authority, RDA (Regional Development Agency) and any landowners aware of the nomination
- taken steps to publicise their nomination to the wider community through advertisements in local newspapers, and included in such advertisements the fact that information on how to have your say can be obtained from a Government website www.nuclearpowersiting.decc.gov.uk
- considered raising awareness with the existing site stakeholder group in the case of existing nuclear sites
- considered discussing awareness raising plans with the relevant local authority / authorities.
- made available the leaflet New Nuclear Power Stations: How sites will be chosen and how you can have your say (or referred attendees to the leaflet via the Government's website www.nuclearpowersiting.decc.gov.uk).

3. Community Awareness Raising – Statement of work undertaken

3.1 Awareness raising strategy

The awareness raising strategy was designed to ensure that the stakeholder engagement would meet the requirements of government policy.

Key elements of local awareness raising were through a public SSG meeting and local drop-in exhibitions at which members of RWE's nuclear team were on hand to answer questions about the Government's SSA process and to explain the company's interests in Braystones. A number of letters were sent to the local community, key stakeholders and the SSG. Please refer to Appendix 1 for copies of these letters.

Turning to the SSA awareness raising requirements set out in section 2 above, and taking each of the points in turn:

3.2 Local government

RWE has entered into dialogue with the local authority (Copeland Borough Council), Cumbria County Councils and the most relevant parish council's, regarding the sites at Sellafield, Braystones and Braystones. The dialogue appraised the bodies of RWE's interests and the SSA process. As a result of this dialogue RWE held two public meetings.

3.3 RDA

The RDA were notified of the nomination in a letter dated 26th March 2009 and included a copy of a letter sent to local householders.

3.4 Landowners

Correspondence has been sent to landowners and immediate neighbours informing them of the nomination. A template copy of the letters sent to landowners (a pre-requisite to making a nomination) sent on 23rd March 2009 is included within Appendix 1.

3.5 Community awareness raising

Community awareness raising included:

- Hand delivered letters to householders within the local community
- Exhibitions and SSG
- Newspaper advertisements (Appendix 2)
- Press releases to local media about the 'drop in' meetings and information available (Appendix 2)

Further press coverage relating to the Braystones nomination included RWE's grid connection (Appendix 3).

3.5.1 Hand delivered letters to householders

Approximately 450 letters, informing recipients of the drop in meetings, were delivered by hand to homes within the local community on the 13th March 2009. The letters contained information about the Government's SSA process, notification of the nomination at Braystones, a copy of the Government's leaflet, details of the forthcoming exhibitions, details of RWE's phone telephone number, the Government's web address and an email address. A copy of the letters are included within Appendix 1 together with The Department for Energy & Climate Change (DECC) leaflet which accompanied it, ***New Nuclear Power Stations: How sites will be chosen and how you can have your say.***

3.5.2 Exhibition

Bespoke exhibition panels outlined the SSA process as well as providing an indication of the timeline for the development of new nuclear power stations were displayed at the drop in meeting. These

panels referenced the opportunities for people to have their say to Government. Further exhibition panels included a location map, as well as an indicative draft outline of the proposed nomination site.

Information packs designed specifically for these events were available for people to take away along with copies of The Department for Energy & Climate Change (DECC) leaflet, ***New Nuclear Power Stations: How sites will be chosen and how you can have your say.***

Feedback forms were also made available to attendees at the drop in sessions.

3.5.3 Advertising

Newspaper advertising for drop in meetings were covered in the local newspapers. The advert was designed to raise awareness that the Braystones site was to be nominated, and included details of the exhibitions, phone number and email address. Copies of the newspaper adverts are included in Appendix 2, and the publication dates are set out below.

Local Press Advertising

Whitehaven News

19th March

North West Evening Mail

19th March

Workington (West Cumberland) Times & Star

20th March

3.6 West Cumbria Site Stakeholder Group

A public meeting of the WCSSG was held on the 18th March in Whitehaven and the SSA process was discussed and a presentation made by West Lakes Renaissance. Prior to the meeting letters were sent to the SSG members and key stakeholders informing them of the meeting. The SSG informed attendees of the intention to nominate the Sellafield, Braystones and Braystones sites, and RWE were in attendance to answer questions at the meeting.

3.7 Discussion of awareness raising plans with the local authority / authorities

RWE wrote to the local authorities on 13th March 2009 confirming the intention to nominate land at Braystones into the SSA process and its plans for public engagement.

RWE also met a selection of parish councillors on March 17th, and held a drop-in meeting and public meeting on March 26th in Beckermet.

3.8 Making available the Government's leaflet

Copies of the Government's leaflet were included with the letter that went to householders, and this was then copied to the various statutory and non statutory bodies. The leaflet was also made available at the exhibitions and could be downloaded via the Government's website.

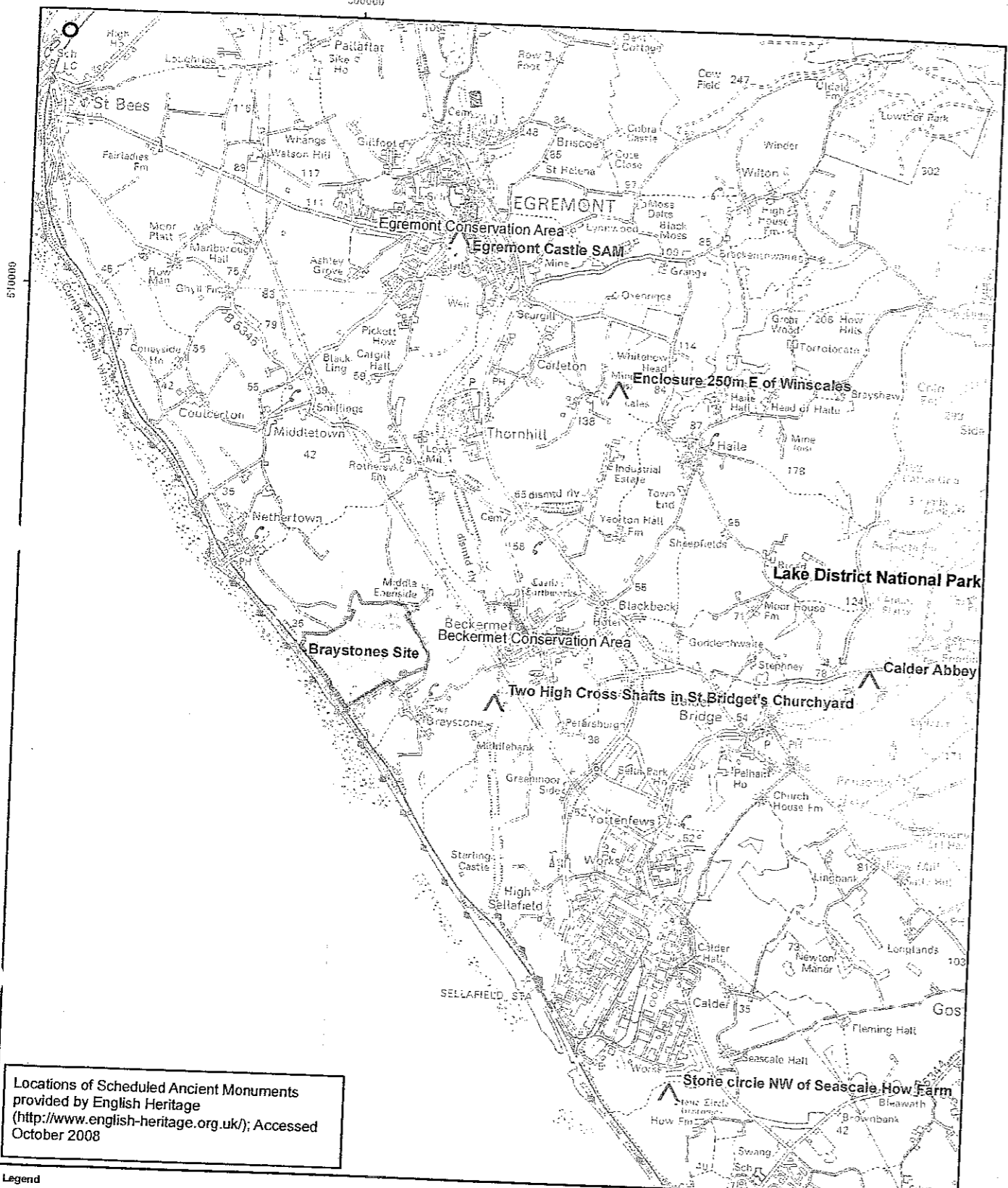
3.9 Other points to note

3.9.1 Website and phone number

The Government's website was promoted within the various communication materials. The provision of a telephone number and an email address were also promoted and were intended as an additional measure to provide a wider means of communication.

4. Conclusion

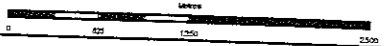
It is believed that this nomination meets the requirements of section A4 of the nomination form and guidance.



Locations of Scheduled Ancient Monuments provided by English Heritage (<http://www.english-heritage.org.uk/>); Accessed October 2008

- Legend**
- Braystones Site
 - Scheduled Monuments
 - Conservation Areas
 - Lake District NP
 - Grade I Listed Building
 - Grade II* Listed Building
 - Grade II Listed Building

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Client				
RWE Npower Plc				
Job Title				
Braystones Site Nomination				
Drawing Title				
Areas of Amenity, Cultural Heritage and Landscape Value				
PI	20/03/2009	IDR	IDR	
Issue	Date	By	Chkd	Appd

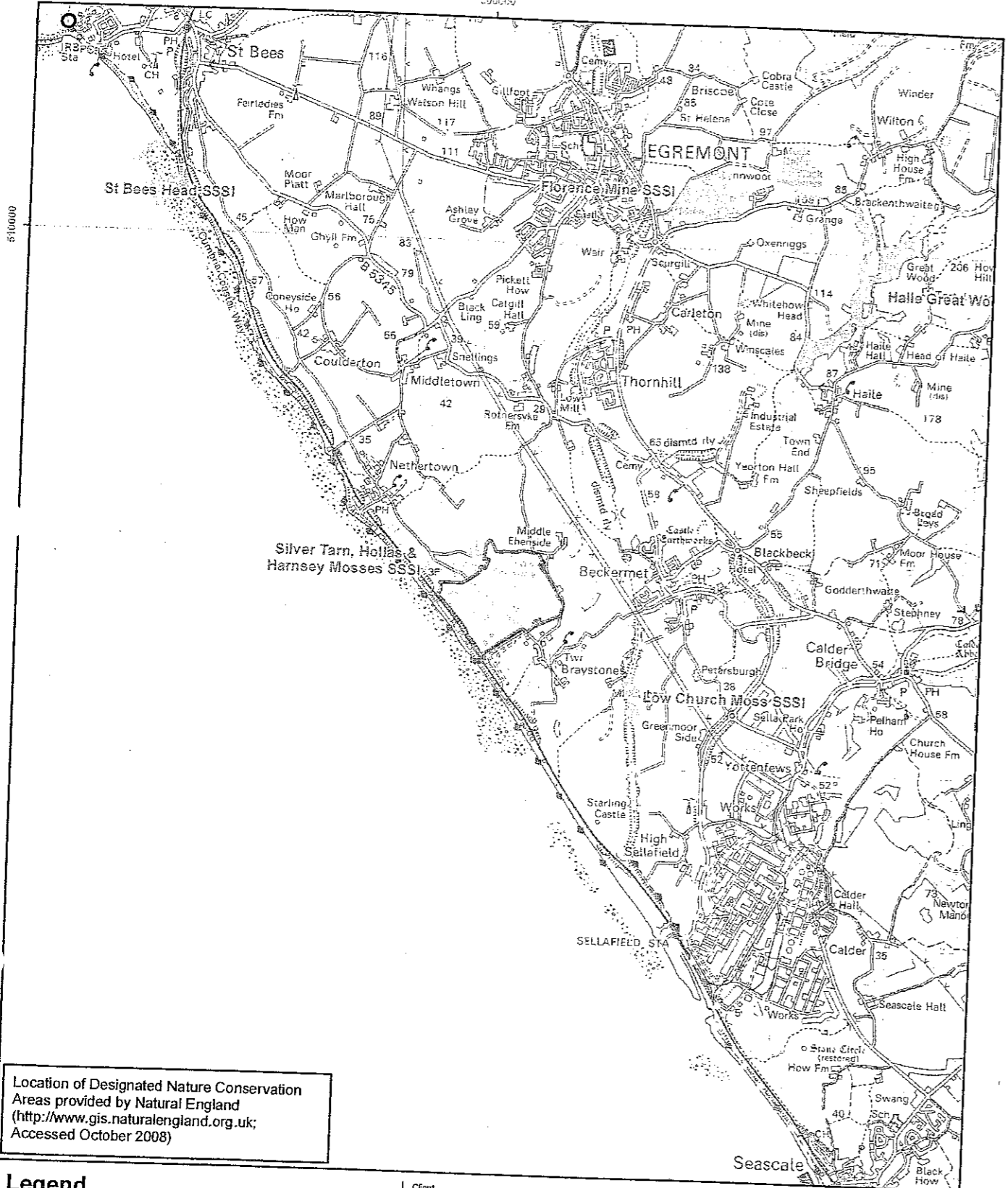
ARUP

Arup Nottingham
3rd Floor The Frontage, Queen Street, Nottingham, NG1 2BL
Tel +44 (0)115 948 4711 Fax +44 (0)115 948 4185
www.arup.com

Scale at A4
1:50,000

Drawing Status
Issue

Job No	Drawing No	Issue
207894-00	Figure D8.1	P1



Location of Designated Nature Conservation Areas provided by Natural England (<http://www.gis.naturalengland.org.uk>; Accessed October 2008)

- Legend**
- Braystones Site
 - Sites of Special Scientific Interest

Client				
RWE Npower Plc				
Job Title				
Braystones Site Nomination				
Drawing Title				
Nationally Designated Sites of Ecological Importance				
P1	26/03/2009	IDR	IDR	IDR
Issue	Date	By	Chkd	Appd

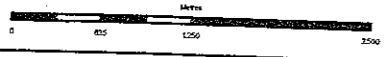
ARUP

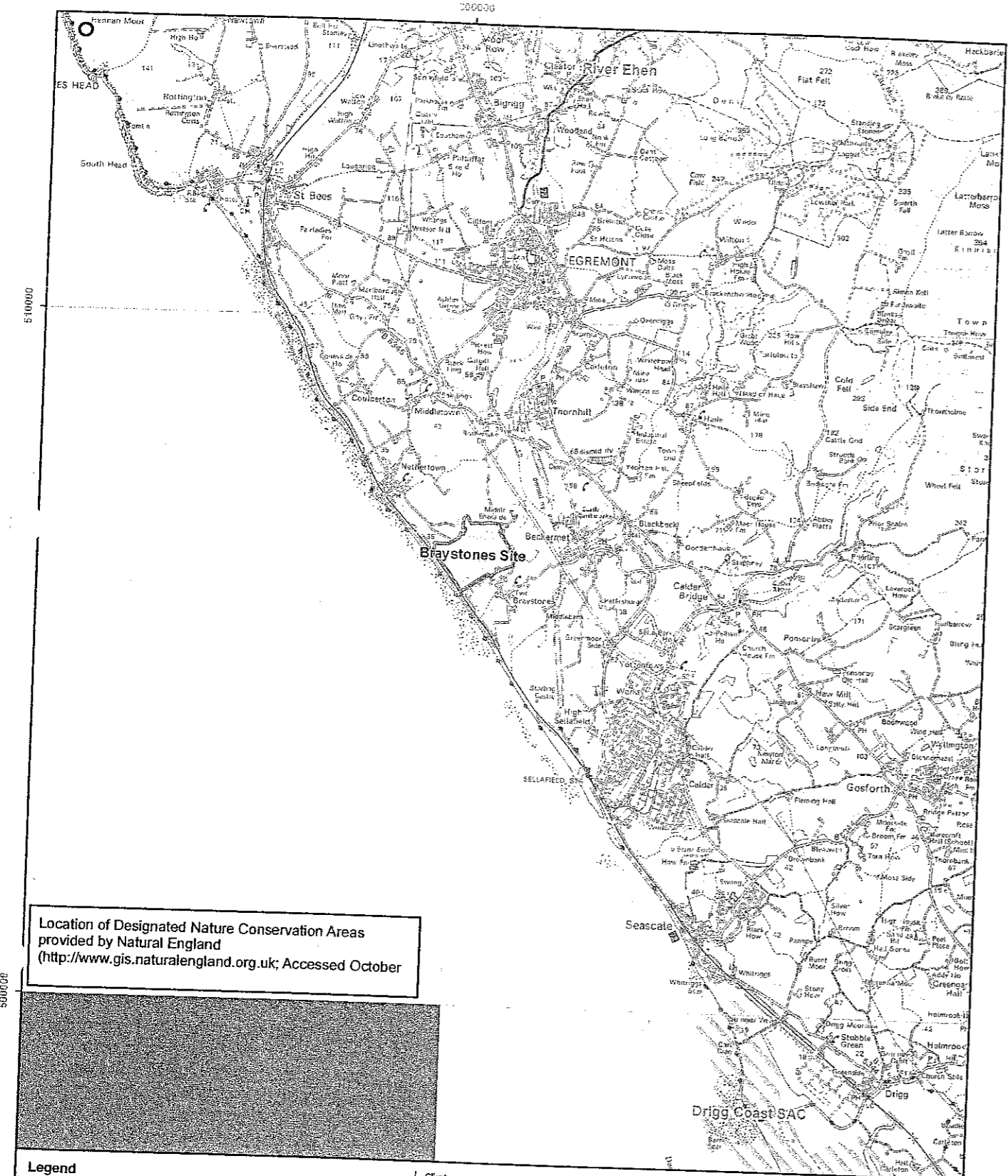
Arup Nottingham
3rd Floor The Frontage, Green Street, Nottingham, NG1 2BL
Tel +44 (0)115 948 4711 Fax +44 (0)115 948 4185
www.arup.com

Scale at A4
1:50,000
Drawing Status
Issue

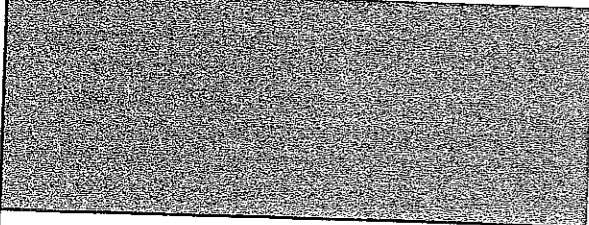
Job No	Drawing No	Issue
207894-00	Figure D7.1	P1

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Location of Designated Nature Conservation Areas provided by Natural England (<http://www.gis.naturalengland.org.uk>; Accessed October



- Legend**
- Braystones Site
 - Ramsar Sites
 - Special Areas of Conservation
 - Special Protection Areas

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Client
RWE Npower Plc

Job Title
Braystones Site Nomination

Drawing Title
Internationally Designated Sites of Ecological Importance

PI	31/12/08	IDR	IDR	
Issue	Date	By	Chkd	Appd

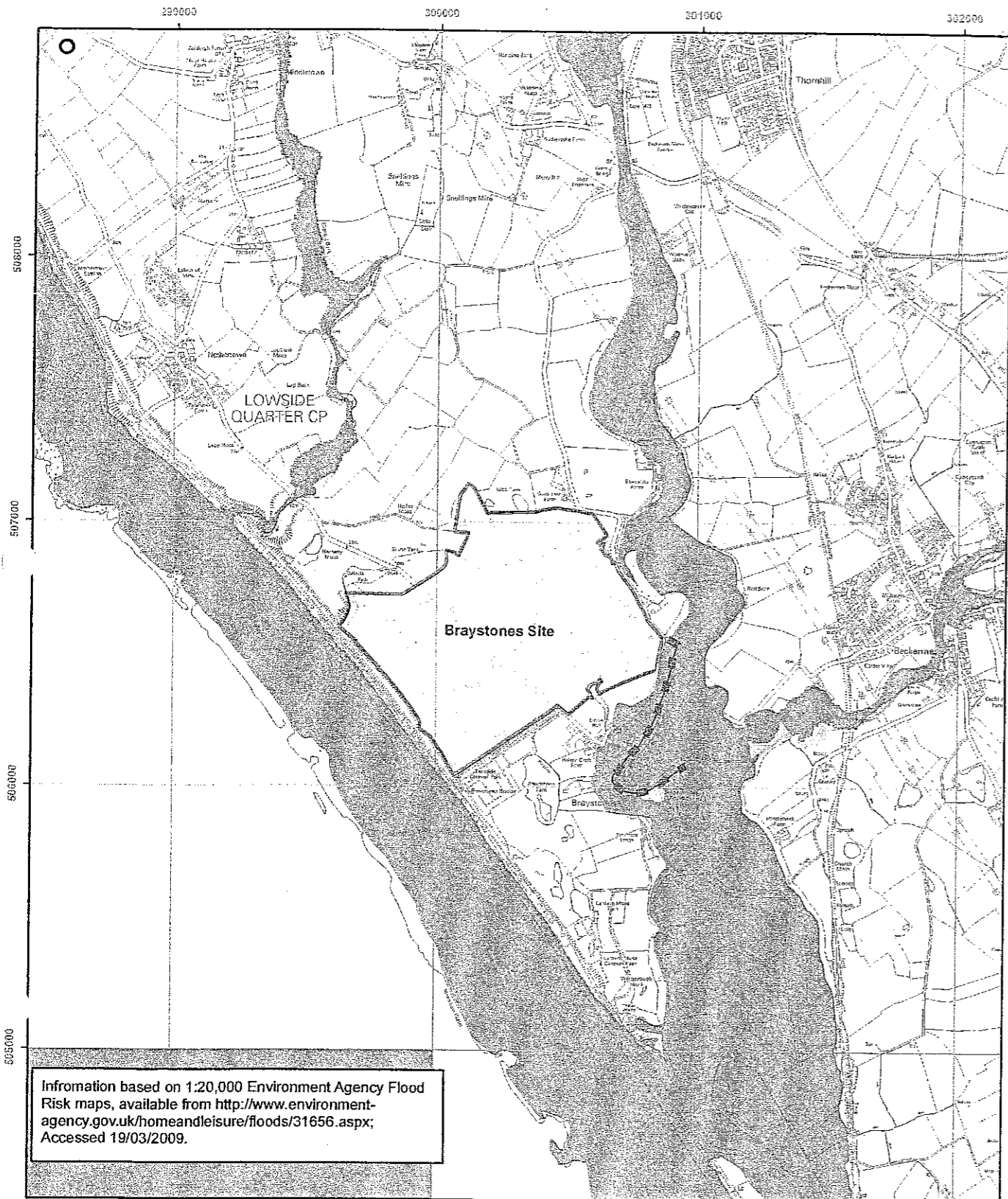
ARUP

Arup Nottingham
3rd Floor The Frontage, Queen Street, Nottingham, NG1 2BL
Tel +44 (0)115 948 4711 Fax +44 (0)115 948 4185
www.arup.com

Scale at A4
1:75,000





Drawing Status
Issue

Job No	Drawing No	Issue
207894-00	Figure D6.1	P1

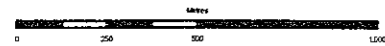


Information based on 1:20,000 Environment Agency Flood Risk maps, available from <http://www.environment-agency.gov.uk/homeandleisure/floods/31656.aspx>; Accessed 19/03/2009.

Legend

-  Braystones Site
-  Flood Zone 2 - Medium Probability
-  Flood Zone 3 - High Probability
-  Flood Defences

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Client
RWE Npower Plc

Job Title
Braystones Site Nomination

Drawing Title
Environment Agency Flood Risk Zones

P1	20/03/2009	IDR	IDR	
Issue	Date	By	Chkd	Appd

ARUP

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Tel +44 (0)115 948 4711 Fax +44 (0)115 948 4185
www.arup.com

Scale at A4
1:20,000

Drawing Status

Issue

Job No	Drawing No	Issue
207894-00	Figure D1.1	P1



Dr. Leonhard Birnbaum
Mitglied des Vorstandes
Member of the Executive Board

Strategic Siting Assessment
Bay 128
Dept of Energy and Climate Change
1 Victoria Street
Westminster
LONDON SW1H 0ET
GREAT BRITAIN

Essen, April 9, 2009

RWE Npower plc nomination of land at Wylfa on Anglesey and Braystones and Kirkstanton in Cumbria into the Strategic Siting Assessment process.

Dear Sir / Madam,

On behalf of RWE AG, parent company of RWE Npower plc, I confirm that RWE AG fully supports RWE Npower plc's nomination of land at Wylfa on Anglesey and Braystones and Kirkstanton in Cumbria into the Strategic Siting Assessment process.

RWE AG is a major international energy company headquartered in Essen, Germany. Through its subsidiary, RWE Power, it has an extensive track record in commissioning, operating and decommissioning of nuclear power plants in Germany. It currently operates approximately 6.3 GW and generates 32 TWh of electricity per annum from its nuclear plants. It is also involved in decommissioning of four plants in Germany. RWE is significantly involved in the nuclear new build project at Belene, Bulgaria together with the Bulgarian State and is part of consortium involved in the nuclear new build activities in Cernavoda, Romania. This experience and expertise will be deployed to support RWE Npower plc's nuclear new build activities in the UK and will ensure that RWE Npower plc meets the UK Government's definition of a credible operator of nuclear power plant.

Yours faithfully

VORWEG GEHEN

RWE Aktiengesellschaft
Opernplatz 1
46125 Essen
T +49 201 12-15900
F +49 201 12-15902
E Leonhard.Birnbaum@rwe.com

Annex D: Nomination Form

The purpose of this form

This nomination form is to put forward a site for consideration by the Secretary of State as strategically suitable for the deployment of a new nuclear power station by the end of 2025. The Strategic Siting Assessment evaluation will be at a strategic and high level and a list of approved sites will be included in the Nuclear National Policy Statement (NPS)

Along with this nomination form, there is an accompanying guidance note at Annex C of the Government response. This explains how to complete the form in more detail and sets out more fully the information required in connection with each criterion.

Copies of this nomination form in Microsoft Word format are available at <http://www.berr.gov.uk/whatwedo/energy/sources/nuclear/consultations/closed-response/page47749.html>

Which parts of the form need to be completed

Nominators should fill in as much of the nomination form as possible. The accompanying guide sets out the information we are seeking. However, for some information - for example possible mitigation actions - it is up to the nominator to determine what is appropriate and relevant.

If a nominator does not provide enough information, this may result in a request for further information. However, nominators should be aware that the failure to provide sufficient information may lead to the decision on the strategic suitability of the site for a new nuclear power station being subject to a number of conditions, or to the nomination being rejected completely.

Other documents that should be submitted with the form

In many cases, the nomination form makes clear what supporting documentation will be required. In other cases, it will depend on the details of the nomination (for example, the specific mitigation actions that may be required). Details of the supporting documentation being provided should be included in the table at the end of each question and in the overall list of supporting documents provided in Section F of the nomination form. Nominators should also include a document reference number (e.g. "001") for each separate supporting document they include and this reference should appear in the relevant tables and be clearly marked on the front of each supporting document itself.

How many copies of the completed form and supporting documentation should be provided?

Please submit the original and 3 copies of the nominated form and all other supporting material. **Please send all the required information to us in a sealed envelope or package marked "SSA Nomination Process" clearly on the front.**

Please also provide an electronic copy of the form and all supporting documents, preferably on an accompanying disc. We would prefer these documents as clean PDF files. Alternatively please supply Microsoft Word (2003 or earlier) files.

May nominations be submitted by email?

Because of the number of supporting documents required, paper-based nominations (with electronic files on an accompanying disc) are strongly preferred.

If nominators regard any information that they provide as commercially confidential and not for publication, they should make this clear on the relevant document or relevant part of the nomination form. They should also provide two versions of the documents provided electronically – one for publication (with the information removed or blacked out) and one not for publication.

What is the deadline?

Completed nomination forms and all associated documents should reach us by 5pm on Tuesday, 31 March 2009.

Where should completed nomination forms be sent?

The address for nominations is:

SSA Nominations
Bay 128
Department of Energy and Climate Change
1 Victoria Street
London
SW1H 0ET
ssanominations@decc.gsi.gov.uk

A Location and other qualifying information

A1 Please describe the location of the site

Title / name of site

Braystones

Description (in words)

Land at Braystones, Cumbria. Grid Reference: NY003066

The Braystones Site comprises approximately 75 hectares of land located north of the Tarnside Caravan Park; West of the River Ehen; South of the Hollas Moss and Siver Tam Site of Special Scientific Interest; and east of the Cumbria Coastal Railway.

The site boundary as shown in A2 relates only to onshore construction, and it should be noted that both a Marine Off-Loading Facility (MOLF) and inlet and outfall pipe-work will be required in coastal/marine areas, outside of the boundary shown on the plan. If, as explained in D10, the direct water cooling option is utilised it should be noted that pipe-work will extend to the open sea for up to 3km from potentially any seaward point shown on the boundary shown in A2.

This nomination is based on desk-based due diligence studies, preliminary site investigations, and information drawn from the public domain. Detailed site investigations or surveys, or discussions with key stakeholders, statutory consultees or the local planning authority have not yet been conducted and do not inform the content of this nomination form or its supporting statements.

The form, scale, reactor type and configuration of supporting infrastructure of a nuclear power station at the Braystones site would be dependant on findings from detailed site surveys and studies, and site optimisation process.

A2 Please set out, by delineating on an Ordnance Survey map at 1:10,000 scale, the boundary of the site.

Documents provided in support of A2	Your reference number
	Please add a reference number to each document you provide
Annotated Ordnance Survey map at 1:10,000	001

scale showing boundary of the area nominated

A3 Is your nomination accompanied by a letter of support from a Credible Nuclear Power Operator (CNPO)?

- Yes If 'yes', then please include the letter from the CNPO with your completed form
- No If 'no', then please include an explanation as to why it is credible that a new nuclear power station can developed at the site set out in A1 and A2 for deployment by the end of 2025.

In addition, and given the importance of meeting carbon dioxide emissions targets, the Government would welcome information about sites that are capable of early deployment. The letter of support from the CNPO or the nominator's own statement should therefore also consider whether a new nuclear power station could be deployed on the site before 2025, the potential timescales for this early deployment, an estimate of the profile of early generation capacity that may be achievable on the nominated site and the reasons behind this statement.

Documents provided in support of A3	Your reference number
Letter from RWE Npower Ltd (CNPO)	002

A4 Have you taken steps to raise awareness of the nomination with local communities living in the vicinity of the site, including the owner(s) of the nominated sites?

- Yes If 'yes', then please provide, as a separate document, a statement of what you have done to meet this requirement. You should demonstrate that you have met the minimum requirement (making the RDA, relevant local authority and any land owners aware of the nomination and taking steps to publicise the nomination to the wider community through advertisements in local newspapers) together with any additional steps you have taken. Please confirm that you have made available information about how people can have their say to Government, as outlined in our guidance.
- No If 'no', then the Government may not be able to consider your nomination further. However, you should explain why it has not been possible to meet the requirement and what you plan to do to remedy the deficiency and the timescales for doing so.

Documents provided in support of A4	Your reference number
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Statement on Local Community Engagement	003
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A5 To help the Government ensure that that alternative sites for new nuclear build have been sufficiently considered at the strategic level, please set out (in a separate document if necessary) the process you followed for selecting this site for nomination, rather than any alternatives, together with the reasons that led you to make this selection:

Please refer to Supporting Document 004: Statement on Site Selection

Documents provided in support of A5	Your reference number
Statement on Site Selection	004

B Information about the person, company or other corporate body submitting the nomination

B1 Please provide the full name and address and other contact details of the individual, company or other corporate body making this nomination

Name of nominator

RWE Npower Plc

Trading/business name (if different from above and if appropriate)

Address

Windmill Hill Business Park,

Whitehill Way, Swindon

Postcode SN5 6PB

Registered Office Address (if different from above and if appropriate)

As above

Postcode

Company registration number (if applicable)

3892782

B2 Holding Companies

Is the nominator a subsidiary of a holding company within the meaning of Section 736 of the Companies Act 1985?

No If 'no', then please proceed to question B3

Yes If 'yes' then please complete the information below

Name of ultimate holding company

99% Ownership by:

GBV Fünfte Gesellschaft für Beteiligungsverwaltung mbH

Address

RWE AG

Opernplatz 1, D-45128, Essen,
Germany

Postcode

1% Ownership by:

RWE AG

Address

Opernplatz 1, D-45128, Essen,
Germany

Postcode

Registered Office Address (if different)

n/a

Postcode

Company registration number

GBV Fünfte Gesellschaft für Beteiligungsverwaltung mbH: HRB16281

RWE AG: HRB14525

B3 Who can we contact about your application?

Please provide the details of someone whom we can contact directly with any questions about your application or information about its progress. The person you name should have the authority to act on behalf of the nominator and this information should be updated if either the contact or if the company pursuing the nomination change.

Name Mr Stuart Dagnall

Position Nuclear Development Manager

Address RWE Npower Plc
Windmill Hill Business Park, Whitehill Way
Swindon, Wiltshire
Postcode SN5 6PB
Telephone number (office) (mobile)
Fax number
E-mail address information@rwenpowercumbria.com

C Information required about the SSA exclusionary criteria

C1 Demographic risk (exclusionary criterion)

Given the complexity of this calculation the Government has decided that it is not reasonable to expect nominators to carry out this calculation themselves; rather the calculations will be undertaken by the NII for the area of the nominated site.

Nominators therefore do not need to provide any further information, beyond the description of the site set out in A1 and A2 above, to support the assessment of this exclusionary criterion.

C2 Proximity to Military Activities (exclusionary criterion)

Given the security considerations around the information for this criterion, the Government has decided that it is not reasonable to require nominators to provide it themselves; rather the assessment will be undertaken by MoD for the area of the nominated site.

Nominators therefore do not need to provide any further information, beyond the description of the site set out in A1 and A2 above, to support the consideration of this exclusionary criterion.

Please note that proximity to other military activities is also covered in question D5 below as a Discretionary criterion.

D Information required about the SSA discretionary criteria

D1 Flooding (discretionary criterion)

Does the site (as set out in A1 and A2 above) fall within any areas of high flood risk – for example, within zone 3 of the Environment Agency flood risk categorisation?

No If 'no', then please proceed to question D2.

Yes If 'yes' please explain which parts of the nominated site are affected in this way and the basis for this view.

Description of any parts of the site that are affected by flooding risks as described above (if relevant). Please include a map, if appropriate.

None

Please refer to Supporting Document 005: Statement on Flood Risk

If you have answered 'yes' to D1 above, you should set out in a separate document which should be submitted with this nomination form why it is reasonable to conclude, at a strategic level, that a new nuclear power station within the nominated site could be protected against flood risk throughout its operational lifetime, including the potential effects of climate change, storm surge and tsunamis. Please outline any countermeasures that you are assuming would need to be taken.

In addressing these points you should make sure that you have covered:

- * the protection measures you believe would be appropriate to protect the site against flooding;
- * whether the protection measures would affect other designated areas;
- * the assumptions that have been made about off-site flood protection and water management and, in particular, the reliance on flood protection measures which are in the control of other parties, such as neighbouring landowners or government bodies;
- * the potential for flooding to impede access to the site in respect of both normal operations and emergency services;
- * whether the development of a new nuclear power station on the site (including any likely mitigation measures) is likely to increase flood risk elsewhere.

- Why it is reasonable to conclude that the nominated site is likely to pass the sequential test as set out in the guidance to nominators.

Documents provided in support of D1	Your reference number
Statement on Flood Risk	005

D2 Coastal erosion or other landscape change scenarios (discretionary criterion)

Does the site (as set out in A1 and A2 above) cover any areas that are at risk from coastal erosion or other landscape change scenarios?

No *If 'no', then please explain why you consider this to be the case and proceed to question D3.*

Explanation as to why the site will not be affected by the risks described above (if relevant). Please set out in a separate document, if necessary.

Please refer to Supporting Document 006: Statement on Coastal Erosion and Landscape Change Scenarios.

Yes *If 'yes', please explain which parts of the site are affected in this way and the basis for this view. You should also provide the further supporting information requested below.*

Description of any parts of the site that are affected by the risks described above (if relevant). Please include a map, if appropriate.

If you have answered 'yes' to D2 above, you should set out in a separate document, which should be submitted with this nomination form, why it is reasonable to conclude, at a strategic level, that a new nuclear power station within the nominated site could be protected against coastal erosion and other landscape change scenarios, including the potential effects of climate change, for the lifetime of the station. Please outline any countermeasures that you are assuming would need to be taken.

In addressing these points, or otherwise, you should make sure that you have covered the following:

- the wider impacts of any coastal protection countermeasures on areas surrounding the development of a new nuclear power station within the site;
- interaction with the local and regional plans for coastal protection and watercourse management; and
- any reliance on third party schemes for protection that is being assumed.

Documents provided in support of D2	Your reference number
Statement on Coastal Erosion and Landscape Change Scenarios	006

D3 Proximity to hazardous facilities (discretionary criterion)

Given the security considerations relating to the information for this criterion, the Government has decided that it is not reasonable to require nominators to provide this themselves. Rather the assessment will be undertaken by the Health and Safety Executive (HSE) for the area of the nominated site.

Nominators therefore do not need to provide any further information, beyond the description of the site set out in A1 and A2 above, to support the consideration of this discretionary criterion.

However, nominators may wish to put forward arguments in a separate document for countermeasures or mitigations, if they think that the nominated site may be affected.

We do not believe that the nomination site is at risk from any hazardous facilities and no information is therefore submitted on countermeasures or mitigations.

Documents provided in support of D3	Your reference number
No measures considered necessary	None

D4 Proximity to civil aircraft movements (discretionary criterion)

The Government recognises that not all the information for this criterion is available in the public domain and has therefore decided that it is not reasonable to require nominators to provide this themselves; rather the assessment will be undertaken by the Civil Aviation Authority (CAA) for the area proposed by the nominator.

Nominators therefore do not need to provide any further information, beyond the description of the site set out in A1 and A2 above, to support the consideration of this discretionary criterion. However, they are encouraged to check the proximity of civil aircraft movements to the nominated site (as set out in A1 and A2), where information is available in the public domain.

However, nominators may wish to put forward arguments in a separate document for countermeasures or mitigations, if they think that the nominated site may be affected.

Documents provided in support of D4	Your reference number
Statement on Proximity with Civil Aircraft Movements	007

D5 Proximity to other military activities (not covered by C2 above)
(discretionary Criterion)

Does the site (as set out in A1 and A2 above) cover any areas that are in close proximity to or may affect MoD assets or activities not covered by criterion C2 above? Such assets and activities may include (but are not limited to) technical sites and transmitters, offshore danger areas, and nuclear facilities (including ports used by military vessels).

No If 'no', then please explain why you consider this to be the case and proceed to question D6

Explanation as to why the site will not be affected by the risks described above (in particular, identify any military activities in the vicinity of the site which were considered but dismissed as unlikely to be affected by the site's development). Please set out in a separate document, if necessary.

Please refer to support document 008: Statement on Proximity to Military Activities not Covered by C3

Yes If 'yes', please explain which parts of the site are affected in this way and the basis for this view. You should also provide the further supporting information requested below.

Description of any parts of the site that are in close proximity to or may affect MoD assets or activities not covered by question C2 above (if relevant). Please include a map, if appropriate.

If you have answered 'yes' to D5 above, you should set out in a separate document, why it is reasonable to conclude, at a strategic level, that this proximity should not rule out the site for consideration for a new nuclear power station. Nominators may wish to put forward arguments for countermeasures or mitigations, if they think that the nominated site may be affected

Documents provided in support of D5	Your reference number
Statement on Proximity to Military Activities not Covered by C3	008

D6 internationally designated sites of ecological importance (discretionary criterion)

Is the nominated site (as set out in A1 and A2 above) in, or could its development impact, areas that are designated for ecological protection under the Ramsar and Natura 2000 networks?

No If 'no', explain why you consider this to be the case and then please proceed to question D7.

Explanation as to why the development of the nominated site will not have an impact upon any area in its vicinity, which is designated for ecological protection under the Ramsar and Natura 2000 networks.

Yes If 'yes', please explain which areas are affected in this way and the basis for this view. You should also provide the further supporting information requested below.

Identify the area(s) designated for ecological protection under the Ramsar and Natura 2000 networks that could be affected in this way (if relevant). Please include a map, if appropriate.

Please refer to Supporting Document 009: Statement on Internationally Designated Sites of Ecological Importance

If you have answered 'yes' to D6 above, you should set out in a separate document, which should be submitted with this nomination form, the likely level of impact and why it is reasonable to conclude, at

a strategic level, that it should be possible to avoid or mitigate any such impact to the standards set by the Habitats Directive.

Nominators are encouraged to share the results of any discussions they have had with statutory consultees and other nature conservation bodies responsible for overseeing the management of these areas in response to this criterion.

Documents provided in support of D6	Your reference number
Statement on Internationally Designated Sites of Ecological Importance	009

D7 Nationally designated sites of ecological importance (discretionary criterion)

Is the nominated site (as set out in A1 and A2 above) in, or could its development impact, any areas that are designated for ecological protection at a national level?

No If 'no', explain why you consider this to be the case and then please proceed to question D8.

Explanation as to why the development of the nominated site will not have an impact upon any area in its vicinity, which is designated for ecological protection at the national level.

Yes If 'yes', please explain which areas are affected in this way and the basis for this view. You should also provide the further supporting information requested below.

Identify the area(s) designated for ecological protection at national level that could be affected in this way (if relevant). Please include a map, if appropriate.

'Silver Tam, Hollas and Harnsey Mosses' Site of Specific Scientific Interest

Please refer to support document 010: Statement on Nationally Designated Sites of Ecological Significance

If you have answered 'yes' to D7 above, you should set out in a separate document, which should be submitted with this nomination form, the likely impact and why it is reasonable to conclude, at a strategic level, that it should be possible to avoid or mitigate any such impact.

Nominators are encouraged to share the results of any discussions they have had with statutory consultees and other nature conservation bodies responsible for overseeing the management of these areas in response to this criterion.

Documents provided in support of D7	Your reference number
Statement on Nationally Designated Sites of Ecological Significance	010

D8 Areas of amenity, cultural heritage and landscape value (discretionary criterion)

Is the nominated site (as set out in A1 and A2 above) in, or could its development have an impact upon, any area that is designated for its high amenity, landscape or cultural heritage value?

No If 'no', explain why you consider this to be the case and then please proceed to question D9

Explanation as to why the development of the site will not have an impact upon any area in its vicinity, which is designated for its high amenity, landscape or cultural heritage value. Please set out in a separate document, if necessary.

Yes If 'yes', please explain which parts of the site are affected in this way and the basis for this view. You should also provide the further supporting information requested below.

Identify the area(s) designated as being of high amenity, landscape or cultural heritage value, which could be affected in this way (if relevant). Please include a map, if appropriate.

Lake District National Park (Visual Impact)

Please refer to Supporting Document 011: Statement on Areas of Amenity, Cultural Heritage and Landscape Value

If you have answered 'yes' to D8 above, you should set out in a separate document, which should be submitted with this nomination form, the likely level of impact and why it is reasonable to conclude, at a strategic level, that it should be possible to avoid or mitigate any such impact.

Nominators are encouraged to share the results of any discussions they have had with statutory consultees and other nature conservation bodies responsible for overseeing the management of these areas in response to this criterion.

Documents provided in support of D8	Your reference number
Statement on Areas of Amenity, Cultural Heritage and Landscape Value	011

D9 Size of site to accommodate operations (discretionary criterion)

Please explain why it is reasonable to conclude that there is enough land within the boundary of the nominated site for the secure operation of at least one new nuclear power station.

In addressing this question, please also cover:

- provision for safe and secure storage of all the spent fuel and intermediate level waste produced through operation and from decommissioning on the site of the station, for several decades until it can be sent for disposal in a geological disposal facility; and
- whether there is adequate land available so that effective control over activities and access may be exercised on and around a new nuclear power station on the nominated site.

Documents provided in support of D9	Your reference number
Statement on Size of Site to Accommodate Operations	012

D10 Access to suitable sources of cooling (discretionary criterion)

Please provide information about the cooling technologies that are feasible for likely nuclear power station developments within the nominated site.

In addressing this question, please cover:

- whether it is reasonable to conclude that there are suitable sources of cooling for a new nuclear power station within the nominated site. (If water-based cooling is to be employed, the nominator should indicate why it believes that there is sufficient water for this purpose or other measures that need to be put in place);

- * what impacts (including visual impact) there are likely to be from the need for cooling and why it is reasonable to conclude that these impacts are manageable or able to be mitigated;
- * whether, at a strategic level and subject to local considerations, it is reasonable to conclude that a new nuclear power station on the nominated site would be able to be operated within normal environmental and regulatory requirements; and
- * any issues that may affect cooling over the lifetime of the new nuclear station (including changes in meteorology, climate etc).

Documents provided in support of D10	Your reference number
Statement on Access to Suitable Sources of Cooling	013

E Declaration

I wish to nominate the site set out in A1 and A2 above for consideration by the Secretary of State as suitable or potentially suitable for the deployment of new nuclear power stations by the end of 2025.

I certify that the information in this nomination is correct to the best of my knowledge and belief.

Name of individual or, if making a nomination on behalf of a company or corporate entity, name of the Director of the Company, Company Secretary, Partner or otherwise duly authorised signatory

GUY JOHNSON, COMPANY SECRETARY

Signature of individual or, if making a nomination on behalf of a company or corporate entity, name of the Director of the Company, Company Secretary, Partner or otherwise duly authorised signatory



If making a nomination on behalf of a company or corporate entity, please provide evidence that the individual signing this declaration is a Director of the Company, Company Secretary, Partner or otherwise duly authorised signatory.

Where the nomination is from more than one party, for example a consortium, all nominating parties should sign the declaration and provide evidence of their authority to sign (if appropriate).

Documents provided in support of the Declaration	Your reference number
Company Secretary Evidence	014

F List of all supporting documents provided with this nomination

Please list here, along with your reference numbers, all the supporting documents you are providing with this nomination. This list should include all the documents referred to in response to individual sections and questions above.

Documents provided in support of this nomination	Your reference number
Annotated Ordnance Survey map at 1:10,000 scale showing boundary of the area nominated	001
Letter from RWE Npower Ltd (CNPO)	002
Statement on Local Community Engagement	003
Statement on Site Selection	004
Statement on Flood Risk	005
Statement on Coastal Erosion and Landscape Change Scenarios	006
Statement on Proximity with Civil Aircraft Movements	007
Statement on Proximity to Military Activities not Covered by C3	008
Statement on Internationally Designated Sites of Ecological Importance	009
Statement on Nationally Designated Sites of Ecological Significance	010
Statement on Areas of Amenity, Cultural Heritage and Landscape Value	011
Statement on Size of Site to Accommodate Operations	012
Statement on Access to Suitable Sources of Cooling	013
Company Secretary Evidence	014

Braystones Site

A2: Supporting Document Reference 001: Site Location Plan
Please refer to Figure A2.1

A4: Supporting Document Reference 003: Statement on Local Community Engagement
Please refer to Appendix B, Awareness Raising

A5: Supporting Document Reference 004: Statement on Site Selection

Any developer seeking to apply for planning permission for a new nuclear power station will, as required by the formal Environmental Impact Assessment (EIA) regulations, need to outline the main alternatives considered for that development. A criteria-based evaluation of sites suitable for commercial development of a nuclear power station has been undertaken, looking at previously developed and undeveloped sites across England and Wales. This study included consideration of technical criteria such as access to cooling water supply, grid, transport logistics, statutory designated sites and geotechnical suitability. Data was managed within a Geographical Information System to identify broad zones which were considered suitable to accommodate development and a refined sieving exercise was undertaken to develop a smaller number of potential sites, which have been further evaluated to inform the final selection of sites that will be proposed for inclusion within the Strategic Siting Assessment (SSA) process.

It is recognised that the Nuclear Decommissioning Authority (NDA) are also nominating a number of sites (the suitability of which has been confirmed by their own market testing exercise) and these are to be included within the NDA auction process, strengthening the number of alternative sites considered suitable for development. RWE npower considers that this process is robust and credible being in accordance with both criteria incorporated within the SSA and technical 'constructability' considerations as well as commercial acceptability.

In conformity to the SSA, this paragraph describes the process which we have embarked upon to make the nomination.

Within this nomination, we have provided all the information required by DECC and it is for DECC, based on this information, to determine, within this SSA process, whether the site meets the suitability for new nuclear power station development.

Based on the extrapolation of tidal levels described above, extreme tidal levels for 200 and 10,000 year events have been interpolated as 6.05 m and 7.14 m respectively. It is considered that this extrapolation, to include the 1 in 10,000-year event allows for the effects of extreme storm surge events.

Climate Change Effects on Coastal Flood Risk

Climate change effects on coastal levels have been estimated in accordance with Table B.1 of PPS25. At this strategic level, climate change effects have been estimated up to an arbitrary date of 2160, to allow for a 50 year operation and further 100 year decommissioning period from 2010. A sea level rise of 1.55 m is therefore predicted between publication of the SMP tidal data in 1998, and 2160.

Wave Protection

Based on wave height roses reported by the SMP³, it is anticipated that wave protection defence of up to 4 m should be provided to any nuclear power station at the site. In this instance, it is expected that wave protection would be provided in the form of 1 m of freeboard, with another 3 m of wave protection provided as secondary defence to the site.

Tsunami Risk

The risk of tsunami to the UK was assessed by the Department for Rural Agriculture and Rural Affairs (Defra) study on 'The threat posed by tsunami to the UK'⁴. The study afforded consideration to past events and possible tsunami source regions and conducted modelling of propagation of tsunami waves from selected source locations. Based on the findings of the study, the report suggests that wave heights produced at the coast by tsunami-type events are unlikely to exceed those anticipated for major storm surges. Furthermore, consideration of four tsunami propagation events, suggested that the maximum heights of waves reaching the UK would not exceed 2 m, therefore within the allowance provided for wave protection described above.

Consequently, it is appropriate at this stage to consider that possible effects for tsunami events would be accommodated within the 1 in 10,000 year tidal effects considered above and need not be afforded further specific consideration.

Coastal Flood Risk Vulnerability

Combining the extreme tidal levels with the potential climate change effects on sea levels forecast above with the addition of a 1 m level of freeboard protection, suggests that to ensure resilience to coastal flood risk, a minimum foundation level for the site should be in excess of 8.8 m AOD would be required. Additional protection to 11.8 m AOD would be further required in order to prevent further wave overtopping.

According to Ordnance Survey topographic information⁵, the lowest ground elevations at the site lie in the order of 15 to 19 m AOD. Based on Ordnance Survey topographic NEXTMap information, current ground level elevations at the site are entirely above 15.0 m AOD, making the site resilient to coastal flood risk, without the need for further mitigation.

This is shown on the following Figure D1.4.

³ St Bees Head to Earnse Point Shoreline Management Plan, Map 5: Nearshore Wave Conditions, Bullen Consultants, January 1998

⁴ Defra Flood Management, 2005. The threat posed by tsunami to the UK, June 2005.

⁵ Ordnance Survey NextMap Data

D1: Supporting Document Reference 005: Statement on Flood Risk

The Braystones Site, as described in Section A1, is situated in a coastal location with its south-western boundary separated from the Irish Sea by the cliffs and the embankment of the Cumbria Coastal Railway Line. The site lies at elevations varying approximately 20 and 30 m above Ordnance Datum and contains no main rivers or significant watercourses. The closest significant watercourse to the site is the River Ehen, which passes to the east of the site, at an elevation approximately 5 m below that of the site.

Fluvial Flood Risk

Environment Agency Flood Risk Maps, reproduced as Figure D1.1, indicate the Braystones Site to lie entirely within Flood Zone 1, according to Table D.1 of PPS25. As such the site is wholly designated as occupying land assessed as having less than a 1 in 1,000 annual probability of river or sea flooding in any year (<0.1%).

Coastal Flood Risk

Site vulnerability to coastal flood risk has been considered with regards to the Safety Assessment Principles (SAP) for Nuclear Facilities¹. Under the terms of the Safety Assessment Principles, the Nuclear Installations Inspectorate requires operators to provide flood risk protection so that nuclear facilities can withstand predicted sea level rises, other possible effects of global warming and extreme weather events such as a one in 10,000-year flood risk. On this basis, suitability of the Braystones site has been assessed based on the requirement that the finished platform levels for the site would require land at a level qualitatively calculated to be at least equal to this, with a secondary level of protection provided by the provision of walls wave overtopping defence structures.

Extreme Tidal Levels

Extreme tide levels for the Braystones Site have been conservatively assumed equal to the levels referred in the Cumbria Shoreline Management Plan (SMP) for Tam Point². Based upon extreme tidal levels provided within the SMP, extreme tidal levels for return periods of 200 and 10,000 years were interpolated from the regression shown in figures D1.2 and D1.3.

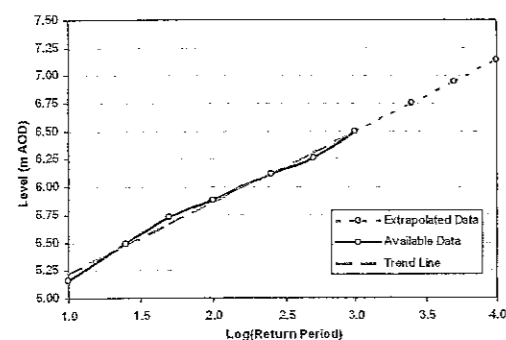


Figure D1.2: Logarithmic Regression of Extreme Tidal Levels from the SMP

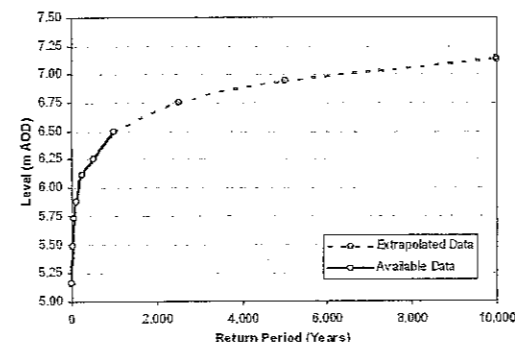


Figure D1.3: Interpolation & Extrapolation of Levels from the SMP

¹ HSE, 2006, Safety Assessment Principles for Nuclear Facilities 2006 Edition, Revision 1, Safety Assessment Principles: EHA.4 EHA.11, EHA.12, EHA.14, EHA.15, ECE.23

² St Bees Head to Earnse Point Shoreline Management Plan, Map 6: Residual Tidal Currents, Bullen Consultants, January 1998. http://mycoastline.org/index.php?option=com_content&task=view&id=99&Itemid=112; Accessed February 12th 2009

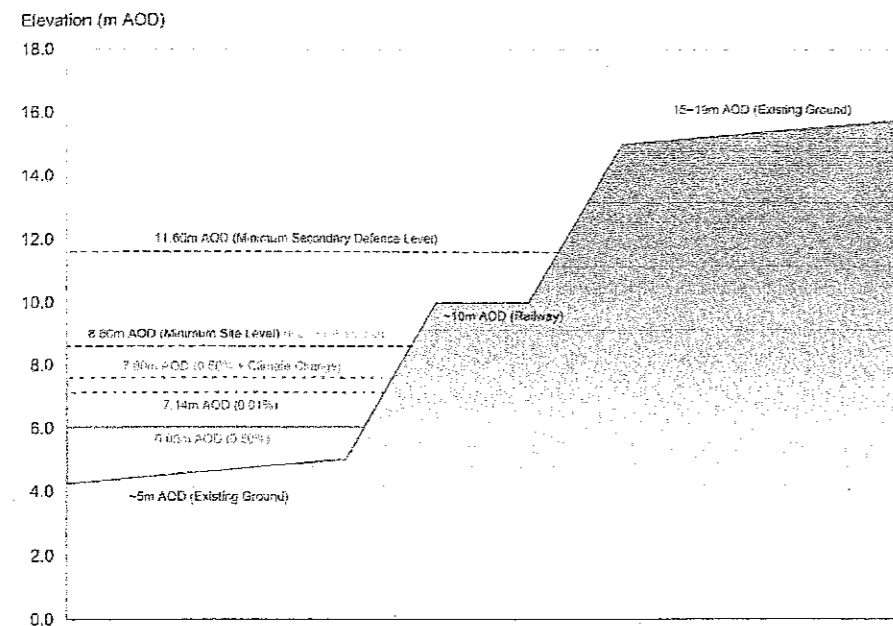


Figure D1.4: Schematic Representation of Site Elevations and Tidal Flood Risk Levels

Flood Risk from Surface Water Management

Flood risk from surface water would ultimately be dependant on the detailed design of surface water management measures adopted at the Braystones Site. Adherence to the requirements of both PPS25⁶ and the SAP⁷ safety case, such a surface water management system would be required to be designed to mitigate residual surface water flood risk up to the 1 in 100 years return period while also providing further allowance for the effects of climate change. This would further assume the worst case scenario of 'total lockdown' with no outfall possible. As a consequence, surface water management infrastructure would be required to accommodate storage (above and below ground) of significant volumes of surface water.

As detailed layout has not yet been determined for the site it is not yet possible to derive a surface water drainage strategy to manage surface water flow. However, surface water management would be designed to accommodate attenuation and storage for 1 in 100 years return period events (including a climate change allowance) over a wide range of storm durations. Swales and other detention devices may be incorporated, as appropriate, to ensure detention of surface waters.

Site Access

Access to the site would be determined through the process of plant layout and detailed design. Nevertheless, it is recognised that plant safety requirements may require normal operational and emergency access to be maintained in flood events. Given such a requirement, access to

⁶ DCLG, 2006. Planning Policy Statement 24: Development and Flood Risk, Department for Communities and Local Government, December 2006

⁷ HSE, 2006, Safety Assessment Principles for Nuclear Facilities 2006 Edition, Revision 1, Safety Assessment Principles: EHA.4 EHA.11, EHA.12, EHA.14, EHA.15, ECE.23

the site would be designed in order to be both resistant to flood events and also to prevent adverse effects to off-site areas.

Measures to Protect Against Flooding

Given that available evidence does not suggest that the site would be vulnerable to coastal or fluvial flooding, site specific flood mitigation measures have not yet been proposed.

Off-Site Effects

It is reasonable to expect that during detailed design and consenting of a nuclear power station, it would be expected to demonstrate that the design includes appropriate water management infrastructure to ensure that surface water run-off and other discharged waters do not adversely affect flood risk or water quality downstream of the site.

PPS25's Sequential Test

PPS25's sequential test⁸ aims to steer new development to areas at the lowest probability of flooding, namely Flood Zone 1 (Low Probability). The Braystones Site lies occupies an area currently exclusively within Flood Zone 1 and as such, in accordance with PPS25's Table D.3, would satisfy the sequential test.

⁸ DCLG, 2006. Planning Policy Statement 24: Development and Flood Risk, Department for Communities and Local Government, December 2006, Annex D

D2: Supporting Document Reference 008: Statement on Coastal Erosion and Landscape Change Scenarios

The Braystones Site occupies a coastal location, with its south-western edge approximately formed by coastal cliffs, falling first down to the Cumbrian West Coast Railway, and then falling further to a shingle beach topped by a berm upon which a number of residences have been constructed. As such, potential coastal erosion of the site is discussed below.

Physical Conditions

The Cumbria Shoreline Management Plan (SMP)⁹, confirmed by site visits, describes the coast at Braystones as formed by a shingle beach with an upper crest berm and a lower sand/scar beach. Elevated approximately 10 m above the crest/ berm of the beach lies the earth embankment which protects and upon which lies the line of the Cumbrian West Coast Railway, which dates from the 1850s. The railway embankment is afforded further localised protection by defensively placed rock armour and railway sleepers. Inland of the railway embankment, ground level rise by a further 5 m to 15 m. Ordnance Survey topographic data for the site puts describes the ground level elevations at the top of the cliff as in the order of 20 to 30 m AOD.

Beach defences at the site are formed primarily by localised beach management carried out by residents, for example, with displaced coarse shingle material pushed back to form a defensive ridge in front of the residential properties. The crest of the beach is used for access to properties and is consequently considered to be heavily compacted.

More formal coastal defences provided by railway embankment are composed of a wide variety of structures included concrete revetments, rock armour revetments and masonry revetments, all of varying condition and standards of protection. SMP1 describes how Railtrack [now Network Rail] operate a programme of progressive upgrading in support of their policy to hold the line of the current Cumbria Coastal Line rather than realigning it.

Coastal Processes and Geomorphology

With regards to beach processes, wave conditions at the Braystones Site occur predominantly from the south-west, which results in a net northerly drift of sediment. Nevertheless, with prevailing tidal conditions to the south-east the balance of littoral drift is considered sensitive to combinations of storm and tide. The alignment of the coast means that it is normal to the predominant wave directions, resulting in little net drift of sediment, with coarser fractions of beach materials only mobilised by storm conditions. Sand on the lower beach, although described forms only a thin veneer on top of scar beds, suggesting little mobility of this feature¹⁰.

Along much of the coast, the railway line lies on a berm formed naturally or cut into the cliff face, which effectively cuts off much of the cliff from the beach system. Cliffs lying between the Braystones Site and the beach composed of glacial till which the Futurecoast cliff classifications¹¹ identifies as typically demonstrating 'low' erosion rates, in the order of 00.1 to 0.5 m / year. It is considered that for the section of shoreline adjacent to the Braystones Site,

⁹ St Bees Head to Earnse Point Shoreline Management Plan, Map 6: Residual Tidal Currents, Bullen Consultants, January 1998. http://mvcoastline.org/index.php?option=com_content&task=view&id=99&Itemid=112; Accessed February 12th 2009

¹⁰ North West England and North Wales Shoreline Management Plan, Appendix C: Baseline Process Understanding, Report C2 – General overview of current understanding, Revision 05/12/2008

http://mvcoastline.org/index.php?option=com_content&task=view&id=156&Itemid=140; Accessed February 12th 2009

¹¹ Halcrow, 2002. Futurecoast. CF produced as part of the Futurecoast project for Defra

A3: Supporting Document Reference 002: Letter from CNPO
Please refer to Appendix A, CNPO Letter

given the continued protection afforded to the cliffs by the beach, erosion rates may be at the lower end of this given the¹².

Coastal Movement

The Braystones Site falls within the Unit No.4 of the Shoreline Management Plan - 'Pow Beck to Whitriggs Scar'¹³. Within this unit the SMP describes coastal processes active at the site as a projected progressive retreat of the coast at 0.2 to 0.5 m/year until it is prevented by coastal defences associated with the Cumbria Coastal Railway. Such a situation would result in gradual loss of much of the finer beach material and steepening of the beach. It is further expected that storm events may then result in increased drawn-down of material, resulting in increased vulnerability of the existing coastline to gradual erosion.

Historically, the actual observed rate of change along the coast has been low. Comparison of historic maps dating back to the 1850s provides no observable movement¹⁴. In terms of typical coastline movement, the section of coastline including the Braystones Site, and the Sellafield complex approximately 3 km south, is described by the Shoreline Management Plan, as experiencing 'No Movement'¹⁵.

Coastal erosion studies undertaken in 2005¹⁶, which focused on frontages at Braystones and Nethertown (immediately to the north of the Braystones Site), suggested that beach levels are generally sufficient to prevent erosion of the cliff toe during normal conditions, and estimated that the average frequency of storms likely to cause erosion of the cliffs is on average every 5 years.

Predictions of Coastline Change

The North West England and North Wales Coastal Group are currently preparing a revised Shoreline Management Plan (SMP) for the coast between Great Orme's Head and the Scottish Border, taking in the coastline potentially affecting the Braystones Site.

In line with 2006 Defra Guidance, the revised Shoreline Management Plan provides assessments of existing defences and the residual life of defences along the shoreline in the event of no active intervention and with continued present management. Assessments of shoreline stability take into account UK Climate Impacts Programme (UKCIP) projections for

The following predictions for coastal trends are based on the Shoreline Management Plan Baseline Process Understanding for Seamil, Couderton, Nethertown and Braystones¹⁷.

Years 0 to 20

In the absence of any formal or informal defensive works, the coastline is expected to remain relatively stable. While storm events would be expected to draw-down shingle from the beach crest, erosion rates would remain low, although the beachside properties at the foot of the railway embankment may become damaged.

¹² North West England and North Wales Shoreline Management Plan, Appendix C: Baseline Process Understanding, Part Q: Hodbarrow Point to St Bees Head (including Rivers Calder and Ehen), Revision 05/12/2008, Section 5

¹³ St Bees Head to Earnse Point Shoreline Management Plan Sub-cell 11d: CPU 4; Management Unit No.4 : Pow Beck to Whitriggs Scar <http://www.mycoastline.org/images/pdf/subcell11d/11datlasmu4.pdf>, Accessed February 10th 2009

¹⁴ Landmark Information Group Service, Envirocheck report for National Grid Reference 300260, 506570, 28-Oct-2008

¹⁵ St Bees Head to Earnse Point Shoreline Management Plan Sub-cell 11d: Map 3

¹⁶ JBA, 2005

¹⁷ North West England and North Wales Shoreline Management Plan, Appendix C: Baseline Process Understanding, Part Q: Hodbarrow Point to St Bees Head (including Rivers Calder and Ehen), Section 4: Baseline Scenario Assessments, Revision 05/12/2008

With continuation of present management practices, it is anticipated that the various defences will continue to protect and maintain the railway embankment. The historical stability of this shoreline is expected to continue with erosion of undefended frontages confined only to storm conditions when upper shingle layers, drawn-down by waves reaching the crest of the beach.

Years 20 to 50

It is anticipated that in years 20 to 50, rising sea levels may impact, resulting in some observable coastal change, and exposure of the railway embankment to wave action. Total erosion is predicted to range from 6 to 10 m

With continued present management practices however, the various defences are expected to continue to protect and maintain the railway embankment, although local extensions to defences to the toe of the railway embankment may be required.

Years 50-100

In the absence of any defensive measures, coarser shingle beach material is still expected to remain on the upper beach, affording protection to the cliffs even under elevated sea level conditions. Erosion would be limited to storm conditions, and rates of recession predicted would range between 16 and 20 m.

With continued present management practices, the SMP predicts that defences will continue to protect and maintain the railway embankment, although further extension to defences may be required. While rising sea levels causing increased draw-down of shingle are predicted to put residential properties at the toe of the cliff and crest of the beach at risk, the railway embankment, which sits between the site and the beach is still considered defensible.

D4: Supporting Document Reference 007: Statement on Proximity with Civil Aircraft Movements

It is noted that additional information is not required to be supplied in response to this criterion. However, the following information regarding the proximity of civil aircraft movements is provided to support the assertion that civil aircraft movements would not be a significant risk.

Having investigated publicly available information it is believed that within 30 km of the nominated site, specified in Section A1, there two airfields/aerodromes. Both aerodromes are unlicensed and as such limited information is publically available. These are as follows;

- Millom Airfield: Now disused and occupied by the Haverigg II wind farm, located approximately 25 km south;
- Cockermouth Airfield: Located 30 km North.

The closest known licensed airfield is Barrow / Walney Island Aerodrome, which is located in the order of 35 km south.

Public Safety Zones

The Copeland Local Plan Proposals Map does not designate any areas of the site as Public Safety Zones. No further evidence of Public Safety Zones affecting the Braystones site has been obtained.

Aerodrome Safeguarding Plans

Annex 4 to DfT Circular: 1/2003 describes those aerodromes which are officially safeguarded and for which official safeguarding maps have been issued. The closest officially safeguarded aerodromes to the Braystones site are Blackpool Airport and Carlisle International Airport. Both Blackpool and Carlisle Airports lie in excess of 70 km from the site, and therefore beyond the 13 km radius that the Civil Aviation Authority recommends should be considered¹⁸.

Aerodrome Traffic Zone (ATZ)

The closest Aerodrome Traffic Zone (ATZ) is that of Barrow / Walney Island Aerodrome, which has a circle radius of 2 nautical miles (approximately 3.5 km)¹⁹. This remains over 30 km from the site and is therefore not expected to be affected.

Existing Air Exclusion Zone

Under the Air Navigation (Restriction of Flying) (Nuclear Installations) Regulations 2001, there is an Aircraft Exclusion Zone taking in 2 nautical miles radius around the existing Sellafield nuclear licensed site. The Braystones Site lies within 2 nautical miles of the Sellafield nuclear licensed site and it is therefore considered that civil aircraft movements within the vicinity of the site would already be influenced by the Aircraft Exclusion Regulations, and it is anticipated that modifications, to accommodate the Braystones site, would not significantly effect civil aircraft movements.

¹⁸ Civil Aviation Authority, 2006. CAP 738: Safeguarding of Aerodromes, Appendix A, paragraph 2

¹⁹ http://www.nats-uk.ead-it.com/public/index.php?option=com_content&task=blogcategory&id=16&Itemid=71.html; Accessed 16/2/09

D5: Supporting Document Reference 003: Statement on Proximity to military activities not covered by C3

Ordnance Survey mapping²⁰ describes the Eskmeals 'Danger Area', offshore from Ravenglass, approximately 7.5 km southeast of the Braystones Site. Analysis of 1:25,000 Ordnance Survey mapping shows no evidence for the presence of other MoD facilities within 10 km of the Braystones Site.

Given the proximity of the main Sellafield complex, approximately 3 km southeast of the Braystones Site, and lying between the site and the Eskmeals Danger Area, it is considered that development at the Braystones Site would not affect activities at Eskmeals.

Furthermore, given the Braystones Site's proximity with the Sellafield plant, and assuming that low-flying activity in the region is already strictly controlled and limited to designated airspace, it is unlikely that risks posed by a site at Braystones would be significantly different to those to the Sellafield complex. Only if an air exclusion zone of significantly greater diameter or altitude to that of the Sellafield complex were to be imposed at Braystones, would it be expected that this could result in significant encroachment on military flying zones.

²⁰ Ordnance Survey 1:25,000 Explorer Map, Sheet OL6, 'The English Lakes: South-western Area', 2002

D6: Supporting Document Reference 009: Statement on Internationally Designated Sites of Ecological Significance

Based on the discussion below and the locations of closest internationally designated sites of ecological significance described in Figure D6.1, development at the Braystones Site, as described in Section A1, would not be expected to effect internationally important ecological sites.

Ramsar Sites

There are no sites, designated under the Ramsar Site network, within 25 km of the Braystones Site.

Special Protection Areas

There are no sites, designated under the Special Protection Area network, within 25 km of the Braystones Site.

Special Areas of Conservation

The closest Special Area of Conservation is the 'Drigg Special Area of Conservation', which is located some 7 km south-east of the Braystones Site.

Impact

Given the proximity of the internationally designated sites described above, the Braystones Site is not considered to cover, or be expected to affect any areas included under the Ramsar or Natura 2000 networks. As such, mitigation works would not be expected to be required, nor would enhancement works be considered appropriate. Future development of a nuclear power station at Braystones would, however, provide opportunities for nature conservation, habitat creation and enhancement at a local level and proposals would be developed along with detailed plant layout and design.

D7: Supporting Document Reference 010: Statement on Nationally Designated Sites of Ecological Significance

Based on the discussion below and the locations of closest nationally designated sites of ecological significance described in Figure D7.1, development at the Braystones Site, as described in Section A1, would not be expected to effect nationally important ecological sites.

Location

The Braystones Site, as described in Section A1, lies in the immediate proximity of the 'Silver Tarn, Hollas and Harnsey Mosses' Site of Special Scientific Interest (SSSI) as notified under Section 28 of the Wildlife and Countryside Act 1981.

Site Character

The Silver Tarn, Hollas and Harnsey Mosses SSSI comprises of four individual wetland areas located immediately to the North of the Braystones Site boundary.

According to Natural England's citation²¹ for the site:

"the site comprises of three separate but related features originating as post glacial hollows in boulder clay and later forming kettlehole tarns. The site exhibits typical stages in the development of kettlehole vegetation from open water, represented by Harnsey 'Moss' through the acid poor-fen of Silver Tarn, to a transitional basin fen stage reflected in the Hollas Moss communities. Additional associated communities include: inundation, tall fen/emergent vegetation, acid flush and carr."

Site Condition

The Silver Tarn, Hollas and Harnsey Mosses SSSI comprises of four discrete units, as shown in Figure D7.2. Conditions of the four discrete units that comprise the Silver Tarn, Hollas and Harnsey Mosses SSSI are described by Natural England in based on the latest assessment of condition, conducted June 2004²². The three SSSI units lying closest to the boundary of the Braystones Site are described as in 'favourable' condition, which by Natural England's definition means that the SSSI units are considered to be adequately conserved and that conservation objectives are being met, albeit with some scope for enhancement of the sites. Condition of a fourth unit of the SSSI, separated by the Braystones Site by the three units in favourable condition, is described as 'Unfavourable, No Change', described by Natural England as meaning:

"the special interest of the SSSI unit is not being conserved and will not reach favourable condition unless there are changes to the site management or external pressures. The longer the SSSI unit remains in this poor condition, the more difficult it will be, in general, to achieve recovery"

The unfavourable condition of the site is attributed by Natural England to water pollution and agricultural run off. Given the location of the site, its surrounding agricultural land use, and the undulating nature of topography, this which would seem characteristic of land use surrounding the SSSI as a whole.

²¹ Natural England File Ref: 90/2

²² <http://www.sssi.naturalengland.org.uk/special/sssi/report/Action.cfm?report=sdit13&category=S3&reference=1001998>; Accessed 13 February 2009

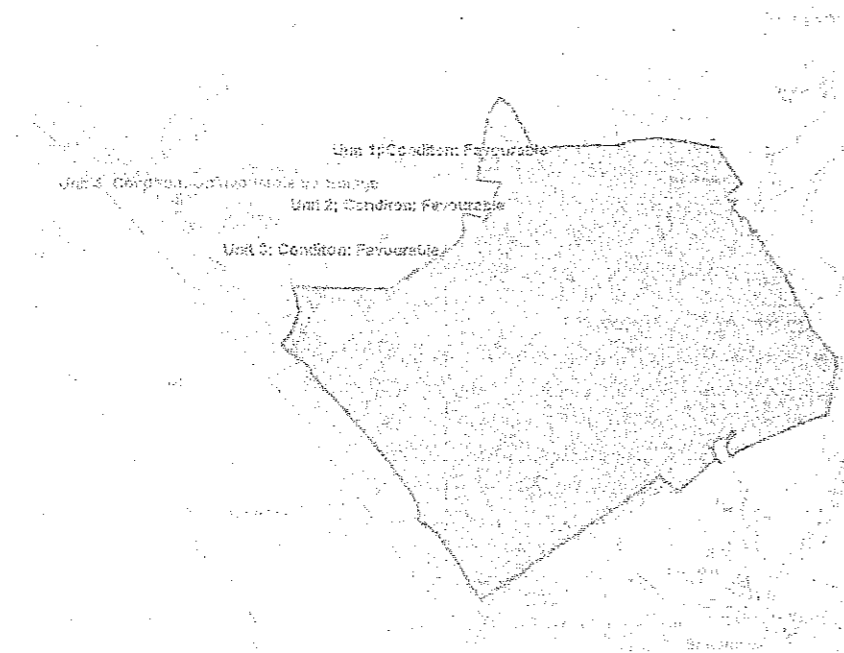


Figure D7.2: Units of the Silver Tarn and Hollas Mosses SSSI

Management

Natural England provides its views on management of the SSSI Silver Tarn, Hollas and Harnsey Mosses in its paper on 'Views About Management'²³. Management practices, associated with the basin fen and mire, the flush and spring fen and the swamp wetland habitats present at the site generally focus on maintaining groundwater and surface water inputs and on water quality. Further guidance is provided to ensure against degradation of habitats by agricultural activities including inflows of chemicals and nutrients, artificial drainage and the effects of animals and grazing.

Based on the nature of the wetland habitats present and the management practices set out by Natural England, there is no reason to suggest that the presence of a Nuclear Power Station on the Braystones Site, and continued conservation of the 'Silver Tarn, Hollas And Harnsey Mosses' SSSI should not be mutually compatible.

Possible Effects on the SSSI of Development at the Braystones Site

The effects of development of a new nuclear power station at the Braystones Site on the character and conservation status of the Silver Tarn, Hollas and Harnsey Mosses SSSI would be dependant on the construction methods adopted, the design of the plant and the environmental management approach adopted for construction and operation of such a plant.

The location of the Braystones Site has been selected with regards to the presence of the Silver Tarn, Hollas and Harnsey Mosses SSSI and the boundary selected in order to avoid directly affecting the wetland habitats. As such construction would not result in land-take at the SSSI and suitable land is available to ensure that temporary land-take would not occupy the sites.

²³ English Nature: Views About Management, Countryside and Rights of Way Act 2000, Schedule 11(6), Version date: 6/9/04

It is possible that development of the Braystones Site, including the need for earthworks and profiling may affect changes to ground and surface water regimes. Along with possible mobilisation and migration to the SSSI of volumes of sediment and construction materials, earthworks may affect surface and groundwater flow regimes.

Notwithstanding, there is no evidence to suggest that construction and operation of a nuclear power station need necessarily compromise the character or conservation status of the SSSI. It is considered that adoption of appropriate sensitive design, construction and operation of a nuclear power station would ensure the avoidance and mitigation of any impact on the SSSI.

Mitigation and Enhancement

Mitigation measures to prevent construction and/or operational impacts on the Silver Tam, Hollas and Harnsey Mosses' SSSI would be developed during plant layout and detailed design proposals. Given the nature of the ecological features and management measures proposed by Natural England, mitigation would be expected to allow the ecological character of the site to be fully maintained, while offering the potential for ecological enhancement. Primarily, mitigation would be provided by ensuring that physical activities were not able to directly impact upon the SSSI. Where necessary, buffer zones and edge treatments may be employed to allow for greater certainty with regards to prevention of direct impacts to the SSSI.

Specific attention may be required to ensure that appropriate control over ground water and surface water flows and quality. Enhancement opportunities may also specifically focus on improving the quality of the various SSSI Units, particularly that of Unit 4 which is currently experiencing unfavourable conditions. Ongoing management plans may also be developed and implemented, in partnership with statutory undertakers as part of a broader overall programme of construction and operational environmental and ecological management.

D8: Supporting Document Reference 011: Statement on Areas of Amenity, Cultural Heritage and Landscape Value

The location of the Braystones Site, as described in Section A1, has been considered with regards to a range of features of national amenity designation, high amenity, landscape and cultural heritage value. The discussion below, together with sites described in Figure D8.1, describes possible effects of development at the Braystones Site on areas of amenity, cultural heritage and landscape value.

Proximity with Designated Sites

The following broad categories of national amenity, cultural heritage and landscape importance have been considered with regards to their proximity with the site, and the possible direct and indirect upon them.

UNESCO World Heritage Sites

There are no UNESCO World Heritage Sites within 30 km of the Braystones Site. The closest is 'Hadrian's Wall Buffer Zone', located over 30km north.

Scheduled Monuments

There are no Scheduled Monuments at the Site. The closest Scheduled Monuments is "Two High Cross Shafts in St Bridgets Churchyard' (No 23782), which is approximately 750 m from the site. Four other Scheduled Monuments are located between 2.5 and 5.0 km from the Braystones Site²⁴.

Proximity of development of a nuclear power station at the Braystones Site would not be expected to result in any direct physical impact to these sites. While development may indirectly affect the setting of Scheduled Monuments, these would entirely dependent on detailed design and the size and scale of plant deployed and on construction methodologies adopted.

Protected Wreck Sites

There are no Protected Wreck Sites within 30 km of the Braystones Site²⁵.

National Parks

The Braystones Site is located approximately 3 km from the 'Lake District National Park'²⁶.

Like the Sellafield Complex which is located approximately 3 km south east of the Braystones Site, it is expected that a new nuclear power station at the Braystones Site would be visible from selected viewpoints within the Lake District National Park. Nevertheless, the site offers various opportunities for visual screening and landscaping, while plant layout may be sympathetically aligned, in order to minimise the effect on views from the National Park.

Area of Outstanding Natural Beauty

The closest Area of Outstanding Natural Beauty (AONB) is the 'Solway Coast' AONB, located approximately 29 km to the north. Given its distance from the Solway Coast, views of the site would not be expected to be significant, and development at the site would not be expected to represent a significant or defining feature from the AONB.

²⁴ English Heritage GIS Dataset of Scheduled Monuments, <http://services.english-heritage.org.uk/NMRDataDownload/>; Accessed 23/03/2009

²⁵ English Heritage GIS Dataset of Protected Wreck Sites, <http://services.english-heritage.org.uk/NMRDataDownload/>; Accessed 23/03/2009

²⁶ Ordnance Survey 1:25,000 Mapping

National Scenic Areas (Scotland)

The Braystones site is over 30 km away from, and not visually linked with any National Scenic Areas (Scotland).

Listed Buildings

The closest Listed Building is Braystones Tower (alternatively known as 'Diamond Jubilee Tower'), a Grade II Listed Building located approximately 500 m from the site.

The closest Grade I Listed Building is 'Egremont Castle', which, located over 3 km north of the Braystones Site, is considered sufficiently distant, and screened by natural features and settlements, to be unaffected²⁷.

Conservation Areas

The closest Conservation Area is the Beckermeth Conservation Area²⁸, which lies approximately 850 m east of the Braystones Site. Based its distance from the Braystones Site, there is no evidence to suggest that this would be directly affected.

Areas of Archaeological Importance

The site does not affect any areas identified as Areas of Archaeological Importance under the Ancient Monuments and Archaeological Areas Act 1979.

Cumbria County Council's Historic Environment Record (HER) for the Braystones Site has been integrated. The HER provides records of five recorded findings of flint remains within the Braystones Site, although provides no specific evidence to suggest that development would compromise local heritage resources.

Possible Impacts and Mitigation

Based on the discussion above and on information available at the time of preparation, there are no aspects of national amenity designation, high amenity, landscape and cultural heritage value that are expected to be directly affected by development at the Braystones Site.

Any future development of the Braystones site for nuclear power plant purposes would be subject to the provisions within Directive 85/337/EC as amended by 97/11/EC and 2003/35/EC. As such, prior to development, impacts on landscape, heritage and other amenity resources, at the international, national, regional and local level, would be assessed, with opportunities for mitigation, enhancement and residual environmental impacts fully detailed.

²⁷ English Heritage GIS Dataset of Listed Buildings, <http://services.english-heritage.org.uk/NMRDataDownload/>; Accessed 23/03/2009

²⁸ Copeland Local Plan, 2001-2016: 1st Deposit Version

D9: Supporting Document Reference 012: Statement on Size of site to Accommodate Operations

The area required to securely operate a new nuclear power station is considerably larger than the area required for the station buildings themselves. Our assessment of land requirements indicate that an area of 30 to 50 ha would be required for the permanent site of a single nuclear power unit, providing for the operation, maintenance, spent fuel and intermediate level waste storage activities. This area would also be sufficient to permit the construction of any cooling towers if they are required at this particular location. Any additional units would require less incremental space. The developable area allows further for allocation of an appropriate requirement of land to allow for ensuring a secure site perimeter and for control and restriction of access to site.

The Braystones Site boundary, as described in Section A1, encompasses approximately 72 hectares of developable land and is therefore large enough to meet the land requirements and satisfy the requirements of the Strategic Site Assessment criterion.

At this stage the site is being nominated on the basis of a technology neutral approach to development, and while no preferred reactor or configuration is currently proposed, consideration has been afforded to technology going through the Generic Design Assessment process. The actual land footprint of the nuclear power station will depend on the number of nuclear units constructed, the choice of nuclear technology, the cooling methodology adopted, and other factors that could affect layout. However consideration has been afforded to generic plant footprints and expectations of the maximum area required for spent fuel in addition to other supporting and ancillary infrastructure including, where necessary, the need for cooling towers.

The area as described in Section A1 does not at this time include allowance for areas that may be required in tidal or coastal areas to support the need for supporting infrastructure, which may include Marine Off-Loading Facilities (MOLF) and cooling water inlets and outfalls, which may extend in the order of 3 km offshore. The actual locations, orientations and scale of such facilities will be determined through detailed survey investigation and plant design.

D10: Supporting Document Reference 013: Statement on Access to Suitable Sources of Cooling

Cooling Water Options

All power stations with steam turbines need cooling to condense the steam leaving the turbines. The steam should be condensed at as low a temperature as possible, as this has a significant effect on both the efficiency and output of the power station. The available cooling options at the Braystones Site would be either:

- Direct Water Cooling;
- Indirect Water Cooling; or,
- Air Cooling.

Direct Water Cooling

This option would involve pumping sea water from the sea through the turbine condensers and returning the water to the sea at a temperature slightly warmer than the intake. This option would give the lowest cooling water temperature, thereby maximising plant efficiency.

Indirect Water Cooling

This option would also use sea water as the cooling medium, but the sea water would be cooled with air in cooling towers. The resultant cooling water temperatures would be higher than those achieved with direct cooling, and plant efficiencies would therefore be lower although less water would need to be abstracted than in a direct cooled system.

Air Cooling

This option would involve condensing the exhaust steam in large air cooled condensers (ACC), over which air is drawn using fans. An ACC produces a very high steam condensation temperature and would require considerable use of electric power to operate the fans. Use of such a system would cause a significant reduction in plant efficiency. No ACC of the size that would be required at the site have previously been built. This would not be a preferred option where alternatives are available.

From the above, it can be seen that the efficiency advantages of direct cooling mean that it would be the preferred option. A primary factor in the selection of the Braystones Site has been its coastal location which lends itself to direct seawater cooling. Proximity of the site with the Irish Sea provides abundant of seawater suitable both for abstraction of cooling water, and for dispersion of discharged cooling water.

Cooling Water Abstraction

A nuclear power station at the Braystones Site employing direct seawater cooling would draw water from the Irish Sea and pump it to the power station site. The number, length and location of tunnels or pipework will be determined by detailed hydrological studies and depend on a range of factors including the size of the plant to be employed, the nature of the reactor technology (although this is confirmed as being conformant to GDA), phasing issues and the permissible temperature differential at the outlet. Intake water will be delivered to a pumping station located below ground and pumped to the condensers.

While indirect cooling could use either water from either the Irish Sea or freshwater, it is unlikely that flows within the River Ehen would be sufficient to provide top-up water without significant ecological impact, and abstraction from the Irish Sea would be utilised.

Cooling Water Discharge

With employment of a direct cooled system, following cooling, water will be discharged to the Irish Sea in an outfall culvert of similar diameter to the intake culvert. Cooling water will be discharged at a location and temperature suitable to ensure dispersion of cooling water plumes without significant effect to marine ecology and to avoid entrainment and recirculation of discharged cooling water.

Local Limitations

There are no local considerations that are currently considered a limitation to the employment of direct (once-through) cooling with sea-water. Thermal entrainment within the Irish Sea would be overcome by selecting appropriate locations of cooling water inlet and outfalls to areas subject to suitable levels of dispersion.

On a terrestrial level, employment of direct sea-water cooling at the site avoids the requirement for significant quantities of land-take to accommodate cooling towers. This therefore enables the site to be developed without the need for significant additional land required for terrestrial cooling water infrastructure.

It is acknowledged that employment of once-through cooling would demand supporting thermal plume dispersion characteristics. The Irish Sea has, in the past, been subject to studies which have demonstrated the efficacy of once through cooling where appropriate abstraction and discharge locations are chosen with appropriate regard to bathymetric, tidal and other oceanographic characteristics.

Construction Environmental Impacts of Direct Cooling and Impact Management

Installation of the cooling water intake and outfalls could have impacts on marine habitats. Construction may involve dredging and disposal of excavated material, which could cause sediment release to the surrounding marine environment.

Any marine disposal should be done away from sensitive fisheries or breeding grounds and timed to be outside of the upwelling period. Marine construction activities associated with the cooling water intake and outfalls systems would be performed during periods of low fish activity.

Operational Impacts of Direct Cooling and Impact Management

Operation of the Cooling Water System (CWS) could affect the surrounding area in a number of ways including thermal effects from the release of warm water into receiving waters, the release of biocide into receiving waters and the impingement and entrainment of free-swimming organisms in water entering the CWS.

Temperature Uplift Effects

The impacts of thermal discharge on the marine ecosystem would be expected to vary depending on the habitat and the degree of mobility of the species present. Benthic organisms spend long periods of their life cycle within small areas and so would be permanently exposed to the prevailing physical conditions. Planktonic organisms are suspended in the water column and would move with the prevailing currents, both into and out of the area affected by thermal uplift. Free swimming species such as marine mammals, fish and some invertebrates may swim into or out of the affected area. Many of these mobile species, however, are also capable of avoidance, through swimming away from adverse condition.

Once-through plant cooling water that is discharged to the sea would result in plumes of locally elevated temperatures in the vicinity of the discharge location. Through a combination of thermal impact modelling and an understanding of sensitive areas of marine ecology, cooling

water systems will be designed to ensure that discharge would avoid significant environmental impact to marine life.

Biocide Effects

It is expected that use of once-through cooling would employ use of biocides to control biofouling in the cooling water systems. In general, biocide would be used at levels such that only the more concentrated levels, found within the cooling water system, would be capable of lethal or other significant impacts on marine life. Use of intake screens would further ensure that larger marine species were not drawn into the cooling water system and would not be significantly affected by biocide treatment.

Modelling of biocide dispersion effects would be conducted to determine appropriate dose levels such that residual biocide half lives would not result in significant marine environmental effects.

Impingement and Entrainment

Operation of the cooling water system would involve the continual intake of large volumes of water. Organisms present in the intake waters may be drawn into the cooling water system and either impinge on the intake screen or, if smaller than the mesh size, pass through the cooling water system.

Detailed design of cooling water inlet location and of the inlet size and spacing will ensure that inlet velocities are selected with regards to swimming speeds of vulnerable species, and inlet bars prevent large fish from being entrained in the system.

Visual Effects

Direct seawater cooling would be expected to have a negligible visual impact. The majority of cooling water infrastructure will be below ground and below sea-level, with no additional need for large scale vertical plant items, cooling towers or atmospheric plume.

Regulatory Aspects

Prior to operation of a nuclear power station located at the Braystones Site, the permissible discharge temperature for cooling water will be agreed with the appropriate statutory authorities. Any permitted temperature gradient, in terms of the difference in the temperature of discharged cooling water to that of the ambient water, will be affected by the rate of abstraction and water use in cooling, and rate of cooling water circulation can be employed to ensure, where appropriate, reductions in the discharge cooling water temperature gradient. Engineering solutions, in terms of changing the rate of circulation of water and the physical characteristics of inlet and discharge points, may be adopted as engineering solutions to alter performance. In support of this, a monitoring regime will also be agreed to ensure that compliance is measured.

Long-term Considerations

Availability of seawater for cooling will not be affected over the lifetime of the plant. Predictions by the UK Climate Impact Programme for sea-level change, included in Table B.1 of PPS25²⁹, project a trend of gradual sea level rise with levels in 2075 (allowing 50 years of operation beyond 2025) expected in the order of 585 mm elevated on those currently observed. UKCIP projections do not anticipate reductions in sea levels for the north-west of the UK, while extreme weather events would not be expected to cause temporary limitations to sea-water availability or the ability to provide cooling.

²⁹ DCLG, 2006. Planning Policy Statement 24: Development and Flood Risk, Department for Communities and Local Government, December 2006

Alternative Cooling Regimes

In the event that direct cooling were to be not feasible, then the alternative cooling regime would be either indirect cooling using seawater cooling towers or a hybrid system employing a combination of direct cooling and cooling towers. Impacts associated with a hybrid system would reflect those associated with direct cooling, although to a lesser extent in relation to reduced demands for abstraction and discharge. Other impacts would be those commonly associated with the use of cooling towers and include the visual impact of the tower, the visual impact of the vapour plume, noise effects from falling condensed water and the additional space required for construction of towers.

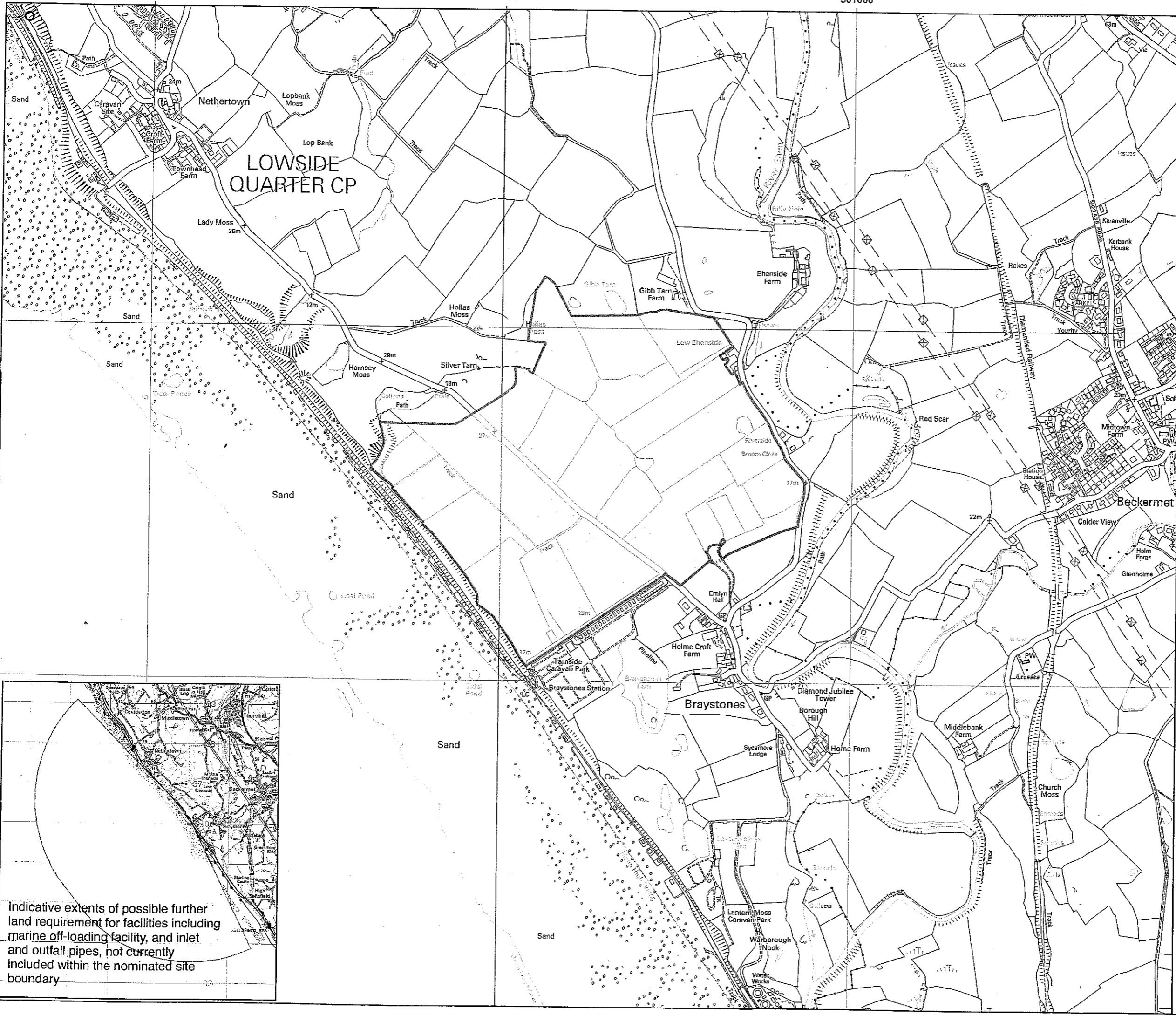
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Legend

 Braystones Site

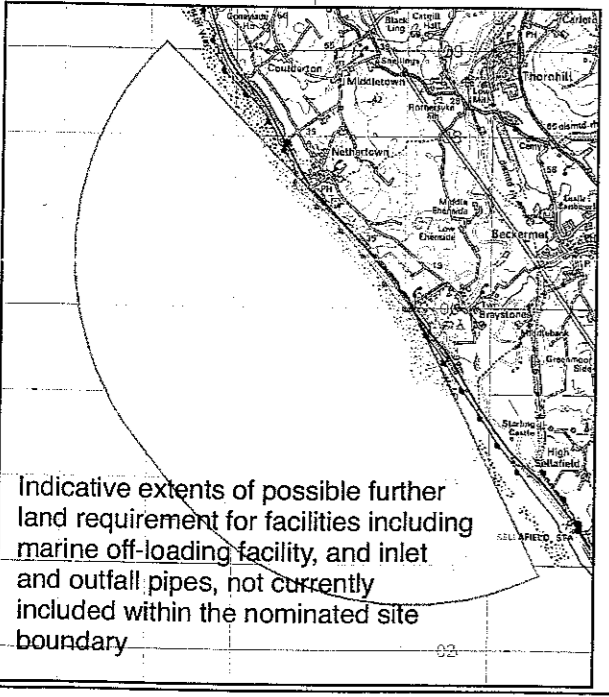
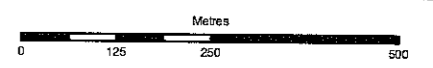


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The site boundary relates only to onshore construction and it should be noted that both a marine off-loading facility, and inlet and outfall pipes will be required in coastal/marine areas, outside of the boundary shown on the plan

P1	20/03/2009	IDR	IDR	
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Issue	Date	By	Chkd	Appd
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Indicative extents of possible further land requirement for facilities including marine off-loading facility, and inlet and outfall pipes, not currently included within the nominated site boundary

Job Title
Braystones Site Nomination

Drawing Title
Site Location

Scale at A3
1:10,000

Drawing Status
Issue

Job No	Drawing No	Issue
207894	Reference 001	P1

