

Mr Richard Mayson  
Director of Planning and External Affairs  
EDF Energy, Nuclear New Build  
90 Whitfield Street  
London  
W1T 4EZ

**Our ref:** AE/2012/115399/01- L01

**Date:** 31 January 2013

Dear Mr Mayson

**Stage 1 Consultation: Initial Proposals and Options for Sizewell C Proposed Nuclear Development - Section 42 Planning Act 2008**

We write in response to this consultation.

Our primary aim is to ensure that any new nuclear power station that you may operate meets high standards of environmental protection and waste management and we seek the earliest possible engagement with you to achieve this.

We have reviewed your documents and many of the things we believe you will need to assess and/or take into account have been identified as in hand, or planned. Issues that arise for us are those concerning flood risk, coastal processes, water quality, ecological harm - especially the potential impact on designated features - and water resources, but this is not an exhaustive list.

There is clearly a significant amount of work still proposed by way of monitoring, studies, reports, development of design details and assessment in many aspects of your proposals, both for a new nuclear power station and the associated development required to support a construction project of this size, and we look forward to receiving these.

Set out immediately below are the headline matters on which we would welcome further assessment and information. So as to ensure that any Development Consent Order application submitted for this proposal is adequate, many of these matters will be best addressed ahead of your Stage 2 consultation as they will help inform your decisions and allow you to develop more detailed proposals. I suggest that we be given the opportunity to help you determine which areas these are. We can provide you with early comments on your designs, as they are developed, which can help ensure that the most suitable choices are pursued.

Should this project proceed, we will want to ensure that the environment is protected. Adequately assessing the impacts of design options, and so reaching appropriate choices at a timely point in the development of your proposals will help ensure this.

The main areas on which we would seek further information and on which we would welcome discussion are:

- The studies identified in the Environmental Report - such as thermal plume modelling, flood risk modelling, groundwater/surface water modelling, marine water quality surveys and coastal surveys, amongst others.
- A Flood Risk Assessment (FRA) that will assess the risk both to, and as a result of development, over the full lifetime of the main site and its associated development proposals, taking account of climate change.
- Details of the proposed jetty, cooling water tunnels and associated foreshore works, and any impacts on coastal processes.
- Information on the siting and design of the temporary and permanent bridges required during construction and operation.
- Water availability and supply needs, notably for operational purposes, but also during construction activities, and any associated impacts.
- Information on the possible re-use, both temporary and permanent, and disposal of material excavated from the main Sizewell C construction site.
- The proposed loss of approximately 4.6 hectares of Sizewell Marshes SSSI, required for the power station platform, and its associated effect on the ecological corridor.
- Means of foul water disposal from the main Sizewell C site and associated development sites.
- A work programme that identifies, more specifically, the matters to be further refined ahead of any Stage 2 consultation.

To help you, where possible, we have laid out our comments in the following format:

**Issue** – indicating a particular area of concern;

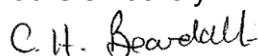
**Comment** – which discusses that issue in greater detail;

**Suggested solution** – which presents a potential solution to the issue in the form of information that - if provided - might ensure that no adverse impact will arise, or identifies a potential mitigation measure, for you to consider.

We have concentrated on the Environmental Report, as this contains the majority of the information on which we would expect to provide advice. The following appendices include our detailed comments and more general supporting advice.

For further discussions, please contact Simon Barlow - our Nuclear New Build Project Manager, on 01473 706745.

Yours sincerely



Dr Charles Beardall  
Eastern Area Manager

## **Index**

Page 3 - Appendix A - Comments on the Environmental Report

Page 25 - Appendix B - Comments on the Transport Strategy

Page 26 - Appendix C - General over-arching comments

Page 31 - Appendix D - Roles and responsibilities of the Environment Agency

## **Appendix A – Comments on the Environmental Report**

### **Section 2.2 Sizewell C Main Development Site**

#### *Permanent Development*

##### Section 2.2.9

States that it is envisaged that the power station would be built at a platform level similar to Sizewell B and that further technical and environmental studies are required to establish the final level. Sight of these studies at the earliest possible time will help us to assess, and inform, your design decisions so as to ensure that any development is built at an appropriate level, when considering flood risk in the area.

#### *Temporary Development*

##### Section 2.2.10

Discusses the construction of a jetty and indicates work areas on the foreshore for the installation of cooling water infrastructure and sea protection. Given the potential for significant effects on coastal processes and water quality we request involvement in the earliest assessment of your design options, so that we can ensure the minimum of impact.

##### Section 2.2.13

###### Issue

Water quality needs to be identified as a key environmental consideration influencing design proposals.

###### Comment

The potential impacts of the development proposals on water quality need to be assessed and considered when making development choices.

###### Suggested solution

Marine water quality should be included as a consideration in your development choices.

### *2.4 Construction*

Construction activities may impact on ordinary watercourses in the area. Where this is the case, it is likely that Consent will also be required, under Section 23 of the Land Drainage Act 1991, for any works to an ordinary watercourse<sup>1</sup> that might affect the flow, including infilling, diverting, or installing temporary culverts. You should, in the first instance, consult the East Suffolk IDB, who are part of the Water Management Alliance, about such works. The Lead Local Flood Authority (Suffolk County Council) can also issue such consents. You will need to establish with whom you discuss your proposals should they affect ordinary watercourses.

---

<sup>1</sup> An ordinary watercourse is defined as a watercourse that does not form part of a main river, and for which the riparian land owner has maintenance responsibilities.

## Section 2.4.2

### Issue

You propose that site clearance and preparation will involve the diversion of an Internal Drainage Board (IDB) main drain (running around the main platform site). There is also an intention to place temporary and permanent bridge structures across this IDB main drain, and the Leiston Ditch main river<sup>2</sup>.

### Comment

Designs should ensure that flow rates are not impacted, maintenance access is incorporated into proposals, loss of flood plain storage is avoided, and adverse effects on biodiversity are prevented.

### Suggested solution

Consent is required from us for the proposed temporary and permanent bridges and other works/structures etc in the north-west area of the main site.

## Section 2.4.3

Should the need to export excavated material from the Sizewell C site result in a short fall of material necessary to carry out construction works, or complete restoration/landscaping proposals, then consideration will need to be given to the source of imported materials required to complete this work - which may include the need to import waste material from elsewhere. This activity is likely to require an Environmental Permit. See Appendix C for further information on Environmental Permitting.

Additionally, this section of your consultation document makes reference to the Waste Hierarchy Directive. However, there is no European Directive specifically on the waste hierarchy, but rather the waste hierarchy forms part of Article 4 of the Waste Framework Directive 2008 (as amended) which is transposed into UK law as the Waste (England and Wales) Regulations 2011. This advice is offered so that you may better comply with the waste hierarchy which is, of course, a legal obligation.

## **Section 2.8 Drainage and Utilities**

### *Surface Water Drainage and quality*

#### Issue

Failure to consider a range of events, including extreme events, could result in the development suffering damage from floodwater.

#### Comment

The surface water drainage strategy for the main development site and the associated development sites will need to consider the management of surface water for a range of rainfall events up to, and including, the worst case event (i.e. in the critical duration event) over the lifetime of the development.

#### Suggested solution

You should consider how you will manage surface water in a range of events, over the lifetime of the proposed development, including the routing of any flows that exceed the capacity of the drainage system.

---

<sup>2</sup> This watercourse is also known by the names of Leiston Drain and Leiston Beck. For the sake of consistency it is referred to throughout this document as 'Leiston Ditch main river'.

### Issue

The location of surface water discharges should be carefully selected to ensure that they discharge into an appropriate location, avoiding unnecessary harm to the environment.

### Comment

If chosen correctly, the location can avoid watercourses from being exposed to excessive flows and potential pollution.

### Suggested solution

All surface water discharges from the main site could, as in the cases of Sizewell A and B stations, be directed to sea via the cooling water outlet.

## **Section 4.2 Terrestrial Ecology & Ornithology**

### 4.2.8 Sizewell Marshes SSSI

#### Issue

The Sizewell Marshes SSSI currently comprise open water, reed bed and wet woodland. Building on these marshes will potentially lead to a number of direct and indirect detrimental impacts on protected species and habitats.

#### Comment

Notable detrimental impacts include the loss of part of a valuable nature conservation area, the reduction in an important wildlife corridor, changes to the hydrological regime of the watercourses in this area and loss of potential flood storage.

#### Suggested solution

Planned ecological studies aim to identify the parameters required for potential SSSI habitat replacement in both hydrological and ecological terms. Water, and therefore an abstraction licence, may be required in order to recreate the hydrological aspects of the SSSI.

Providing replacement land for the Sizewell Marshes SSSI may also offer the opportunity to provide compensatory flood storage, if required, as a result of any increase in local flood risk following proposed changes to land levels.

#### Issue

There is little detail provided on the potential impact of de-watering activities to groundwater in the vicinity of the main site and on groundwater flow towards the Leiston Ditch main river.

#### Comment

A reduction in groundwater and flows could lead to effects on ecology<sup>3</sup>, for instance a drying out of the Sizewell Marshes could cause the local vegetation to be replaced by other species.

Any reduction in ditch water flows and levels could also have a negative impact on the diverse nature of the ecological communities within these ditches - affecting their ecological status.

---

<sup>3</sup> Section 3.9.3 of volume 1 of National Policy Statement EN-6 requires that applicants should also consider the effects of the construction of a new nuclear power station on the groundwater regime and its effects on terrestrial/coastal habitats.

#### Suggested solution

We note that a groundwater model will be developed, together with comprehensive on-site monitoring to enable an assessment on potential impacts and consequences to be made of any changes in groundwater and ditch water levels. We recommend that we are provided with early access to this model so that we can agree its scope and whether studies carried out to date are appropriate.

#### Section 4.4.32

Please note that North Warren is managed by the RSPB and not the Suffolk Wildlife Trust.

### **4.9 Geology and Ground Contamination**

#### *Potential Sources of Contamination*

#### Table 4.9.3

##### Issue

Potential sources of contamination should also include radioactivity.

##### Comment

You will need to provide us with evidence that radiological contamination is not an issue.

#### Suggested solution

Within Section 4.9 there needs to be a link to Section 4.17 - Radiological effects, to acknowledge that this source of potential contamination is to be considered.

#### *Quality Standards, Guidance Values and Compliance Targets*

##### Issue

In terms of land contamination there are no quality standards, guidance values and compliance targets for each type of receptor. Justification for the location and level of sampling is necessary.

##### Comment

The quality standards and guidance values are necessary to understand how each receptor is to be assessed. In addition, the quality standards and guidance values can be different for different receptors. For example, the standards for drinking water are different from estuarine receptors.

Crag, a Principal Aquifer, underlies the site and under the Groundwater Directive there is a requirement to prevent and limit hazardous substances. As such the compliance targets – location and time – need to be considered.

#### Suggested solution

We need to agree the quality standards, guidance values and compliance targets for each receptor. Clear evidence will be necessary to support this discussion and help arrive at decisions. Table 4.9.4 should be amended to include the consideration of quality standards, guidance values, compliance targets and the monitoring requirements to assess overall impacts of land contamination.

For information: There are different types of quality standard and guidance values available in literature, for example Dutch Intervention Values, SGVs, MRVs. We need to

agree in advance the quality standards and guidance values that are to be used and these must then be consistently applied.

### *Potential Sources of Contamination from Proposed Development*

#### Issue

You will need to control potential sources of contamination throughout the lifetime of the development, to ensure that your proposal causes no harm to the environment.

#### Comment

Contamination risks associated with construction and operation will need to be investigated and assessed to ensure that they are adequately managed and the selection of drainage options should take this into account. We note that concerns about peat extraction are identified.

#### Suggested solution

A risk assessment is required. This should identify potential sources of contamination, including hydrocarbons from traffic areas, discharges to land, or soakaway (including accidental releases of radioactive material link to Section 4.17), and storage of hazardous substances. The receptors must include the principal aquifer, the wetland, river and heathland ecology, as well as the tidal interface communities (e.g. benthic communities - linked to Section 4.14).

#### Issue

You indicate that the land is contaminated from previous land use. Although Table 4.9.4 states that the risk level is low to very low – there is no accompanying risk assessment to support this finding.

#### Comment

Removal, or treatment, of this material will need very careful consideration. Depending on the level of contamination found, the contaminated material may need treatment prior to reuse on-site. If the plan is to dispose of it off-site, then it might need some treatment pre-disposal. In both cases a mobile plant permit and an agreed mobile plant deployment form will be required.

#### Suggested solution

We need to agree your proposals for management of contaminated material and – once agreed – you will need to include this in your Waste Management Strategy.

## **4.10 Groundwater**

### Section 4.10.6 and Section 4.10.8

#### Issue

This section states that Red Crag is designated as a ‘Secondary Aquifer’ when it is in fact a Principal Aquifer. Peat is described as ‘not an aquifer’ when it should be considered as Secondary Undifferentiated aquifer.

#### Comment

The Groundwater Directive and WFD require a different approach to principal and secondary classifications. By defining Crag Group as a Principal Aquifer you may change certain assumptions, especially on the prevention and limit requirements of hazardous substances. Likewise, defining Peat as a Secondary Undifferentiated aquifer may change assumptions on the prevention and limit requirements of hazardous substances.

### Suggested solution

Section 4.10.6 as written is incorrect and should denote that the Crag Group, including Red Crag, Norwich Crag and Chillesford Crag, is a Principal Aquifer. Likewise, under Section 4.10.8 the Peat should be regarded as a Secondary Undifferentiated aquifer. A review of the risk assessment is required.

It should also be noted that the schematic geological cross section represented by Figure 4.10.1 needs to be amended to change Crag from Secondary, to a Principal Aquifer.

### Section 4.10.7

#### Issue

This links two unrelated aspects of groundwater. The first few sentences are about Source Protection Zones and the latter sentences focus on the chalk aquifer.

#### Comment

The Source Protection Zones are within the Crag and have no connection with the chalk.

### Suggested solution

We recommend that Section 4.10.7 be split, and each section explained in more detail. This will provide a better understanding of the context in which the report and subsequent risk assessments will then be considered.

### Section 4.10.13

Dewatering of groundwater would be required during the construction phase - we have previously made comments on dewatering activities becoming licensable and groundwater resource status, at Section 3.4.16 above. Please refer to Appendix C for further guidance.

### Section 4.10.15

We endorse your aims to ensure that materials brought onto site do not present unacceptable risks to groundwater quality and do not compromise existing quality standards. We will need to agree your approach as you develop your proposals. Please see our earlier comment under section 2.4 above (construction) on the potential requirement for an environmental permit in connection with the importation of waste material onto the site, as this may well be relevant.

## **Section 4.11 Surface Water and Flood Risk**

### *Surface Water and Flood Risk*

We welcome your intention to identify the scope of your Flood Risk Assessment (FRA), and would expect that this will be agreed with us, before you proceed with the FRA itself. In addition to the comments provided below on specific points, the advice contained within the draft Office for Nuclear Regulation and Environment Agency Joint Advice Note on Principles for Flood and Coastal Risk Management (version 1, dated 11 September 2012) should be used to inform this scoping process.

### Table 4.11.1

We acknowledge your intention to carry out further investigations into the hydrology and river flow in the Leiston Ditch main river as this will help validate any modelled flows that you submit for consideration.

We are also supportive of your on-going work to understand how climate change will potentially affect flood risk to the development site. The most up to date scientific advice should be used and applied over the lifetime of the facility. A comprehensive range of scenarios should be considered in relation to sea level rise, changes to storm surges and wave climate (wave height, period and direction). Consideration will need to be given to both precautionary design and the managed adaptive approach, and reassurance provided that proposals are technically feasible, viable and can be implemented in sufficient time.

#### Figure 4.11.1

##### Issue

We need to agree how you have established your surface water catchment areas.

##### Comment

These boundaries will influence the surface water catchment data and any outputs from the use of this data.

##### Suggested solution

We need greater clarity, and you will need to demonstrate how you have defined these surface water catchment area boundaries.

#### Section 4.11.5

##### Issue

Leiston Sewage Treatment Works (STW) discharges into the Leiston Ditch main river. It is possible that you will propose additional discharges to this STW, during the construction phase and this may potentially have an unacceptable impact on the Sizewell Marshes SSSI. A study of this STW, and how its discharge may affect the Sizewell Marshes SSSI is required before it should receive any additional flows.

##### Comment

This might otherwise result in unacceptable impacts on water quality in the Sizewell Marshes SSSI, which could cause environmental harm.

##### Suggested solution

You will need to assess whether any additional discharge to the Leiston STW would have an adverse impact on the SSSI and, if so, to what degree. To undertake this assessment, you will need to gather information about performance of the STW, especially the flow rates and quality of effluent both before, and during, construction of the power station.

#### Section 4.11.12, 4.11.2 & table 4.11.13

##### Issue

We believe that you need to place greater emphasis on the risks associated with flooding from the sea - including overtopping and potential breach scenarios. A full – and proper – assessment of flood risk will be required.

##### Comment

Your Flood Risk Assessment (FRA) must consider all flood risks, and this must include the probability of failure of any flood defences through breach and/or over-topping, and the consequences of this happening.

### Suggested solution

Your FRA should propose means by which such risks and consequences can be managed, taking full account of the impacts of climate change over the development's lifetime and assess - at the very least - the following:

- The risk that flood water from the sea might reach the development site through failure/overtopping of the defences along the Minsmere frontage.
- The risk that flood defences (i.e. embankments) on the Sizewell frontage itself, might fail.
- The consequence of such defence failures.
- The potential off-site implications of raising ground levels within the flood zone and the any associated increase in flood risk. Any proposal for replacement SSSI habitat might provide an opportunity for compensatory flood water storage.
- The safety of staff and visitors to the power station site during any flooding, in a range of events. This includes their ability to safely access and exit the site during a flood.
- The potential for the power station site to be at risk of surface water flooding from excessive rainfall.
- The potential for any increased surface water discharges to give rise to increases in flood risk elsewhere.
- Whether your proposed power station platform level is sufficient to provide the flood defence protection necessary.

### Section 4.11.14

You have recognised that changes to the offshore sandbanks will alter the wave climate. This changing bathymetry must be reflected in the modelling carried out to establish the flood risk to the development site (over the lifetime of the development in a range of events, including extreme events). The changing beach profile and its impact on flood risk will also need to be considered.

### Section 4.11.15

See comments for table 4.11.1

### Section 4.11.19

We fully support your intention to carry out scoping of the FRA and welcome discussions on this matter, so that we can agree its content, before you commence the assessment process.

### Water quality

#### Section 4.11.2 and Table 4.11.1

##### Issue

The assessment of water quality will require access to appropriate water quality data.

##### Comment

A water monitoring strategy is required to ensure sufficient monitoring has been carried out. We can then properly assess the impact, if any, on water quality and Water Framework Directive (WFD) status as a result of construction, and operation, of the power station. We will need to agree the results of your sampling, and your assessment of compliance against the relevant targets.

#### Suggested solution

We recommend you consult us on this monitoring strategy to ensure the scopes of your studies are adequate.

#### Section 4.11.10

##### Issue

In some instances, poor water quality has been found to exist. It is important that these instances are further investigated and fully understood so that baseline water quality can be determined, and agreed.

##### Comment

Otherwise it will not be possible to differentiate between an existing poor status and a reduction in water quality attributable to the development.

#### Suggested solution

That a study be completed to measure the existing water quality in the surface water drainage system. This study should assess compliance against the relevant environmental targets and suggest reasons for failure where these may already be occurring.

#### Section 4.11.11

##### Issue

We would welcome further advice as to whether such arrangements are expected for the Sizewell C proposal.

##### Comment

There might be adverse effects on receiving waters and these will need to be assessed and considered.

#### Suggested solution

Further information will help us decide whether a water discharge permit will be required. The most appropriate location for main site sewerage discharge is to sea, in combination with the cooling water discharge.

#### Section 4.11.17

Please see Appendix C for further comments on drainage strategies.

## **4.12 Coastal Geomorphology and Hydrodynamics**

### *Proposed MOLF (Marine Offshore Loading Facility) and cooling water intake/outfall structures*

##### Issue

Design of the jetty will need to ensure that coastal processes are not adversely affected.

##### Comment

The construction of the Sizewell B station coastal infrastructure - in the form of a jetty/wharf frontage - resulted in depletion of the beach, along the shoreline in the area. Any new infrastructure in the coastal zone must be designed to ensure minimal interruption to coastal processes and not cause any adverse impacts elsewhere along on the shoreline.

### Suggested solution

This issue is mentioned and it is suggested that impacts can be considered in the design process. We would expect to be involved at an early stage to ensure that environmental concerns are addressed at the design stage and that the option, least likely to cause adverse impact, is pursued.

*Future coastal management options for the Minsmere Reserve and the sluice.*

### Issue

As outlined in the Shoreline Management Plan (SMP 7 – Lowestoft Ness to Landguard Point, Felixstowe) the long-term sustainability of the Minsmere reserve in its current location is uncertain. Although the preferred policy within the SMP is 'managed realignment' the intent is that the reserve remains secure in its current location for a period of around 50+ years. The ability to achieve this is uncertain and dependent upon sea level rise and coastal erosion patterns.

### Comment

There is potential for an associated impact within the Dunwich to Thorpeness bay system and you have acknowledged this.

### Suggested solution

You will need to work closely with us, and Suffolk Coastal District Council coast protection staff, to agree the appropriate future scenarios that may apply; to assess these, and to suggest the implications that each may have on management options along this stretch of coastline.

*Future Geomorphological Scenarios*

### Issue

Assessment of potential geomorphological scenarios for the Sizewell Bay area must be adequate, and agreed.

### Comment

This is perhaps one of the most complex areas that will need to be reviewed and so assessment of the scenarios that might develop must be thorough, and relevant, if we are to gain an understanding of the potential implications.

### Suggested solution

Appropriate future scenarios, and the implications that each one may have for management options along the coastline, should be studied, and submitted for our agreement.

*Factors Affecting the Landscape*

Section 4.12.6

### Issue

This section indicates a list of factors responsible for controlling the coastal landscape between Southwold and Thorpeness, but does not mention the impact of wind, despite the presence of aeolian (wind generated) landforms in the form of vegetated dunes.

### Comment

The role of aeolian transport may be significant if any vegetation removal, as a result of construction, mobilises sediments which could potentially lead to 'blowouts'. The dune

complex forms part of the shore's natural flood defence, and is part of the locally designated habitats.

#### Suggested solution

Wind should also be addressed along with the other factors mentioned in Section 4.12.6 as a mechanism that drives geomorphology in the area. All possible geomorphological impacts need to be considered to ensure best practice and optimum protection throughout the development's lifetime.

#### *Nearshore Morphology*

#### Section 4.12

##### Issue

This makes no reference to the longshore bar feature identifiable in the nearshore bathymetry at -4m OD. Whilst we have been directed to the seabed morphology map (Fig. 4.12.3), which does highlight the feature, its potential importance warrants inclusion within the text itself.

##### Comment

The larger Sizewell – Dunwich Bank appears more significant for flood and coastal protection, but the smaller nearshore bar appears to behave as an important 'store' within the local sediment budget, and will also be likely to play a role in further dissipating wave energy. Consequently the impact on the bar of the permanent beach landing facility and temporary but much larger jetty, both during and post construction, must be considered. The downdrift shoreline is an important aspect of natural coastal protection fronting Sizewell A and B power stations, and is an environmentally designated habitat. As such any adverse impacts resulting from the interruption of sediment transport pathways will need to be avoided or properly mitigated.

#### Suggested solution

Due to its role as a sediment 'store' the longshore bar should be recognised as a factor – see section Section 4.12.7 that underlies sediment dynamics.

#### *Subtidal Morphology*

#### Section 4.12

##### Issue

This section should take into account the seabed morphology on either side of the Sizewell – Dunwich bank. The diversity of bed morphology and flow variations form part of the hydromorphological quality element of the WFD (under the *morphological conditions* and *tidal regime* categories respectively) and so will need to be considered. The cooling water infrastructure for Sizewell B has caused localised scour depressions, highlighting the possibility that the same might occur at Sizewell C, potentially damaging morphological diversity.

##### Comment

The diversity and structure of bed morphology can be important factors for ecology and biodiversity, as well as having a potential impact on flow and current dynamics, and may be detrimentally impacted by the cooling water infrastructure and jetty/beach landing facility.

#### Suggested solution

Whilst the morphology of the seabed is included within Appendix B (Fig. 4.12.3) it should also be referred to within the main report (in addition to the Sizewell – Dunwich bank) and any potential impact upon it must be assessed.

### **4.13 Marine Water Quality and Sediments**

#### *Overall coverage of Marine Water Quality issues*

Further work is required to identify and explain potential impacts to marine water quality. You describe additional work that is either in progress, or has been completed. Reports of this work should be shared with us, for agreement, as soon as possible and, where appropriate, could be usefully included in the appendices of future consultation documents produced.

#### Table 4.13.1

We note the references to thermal plume modelling. We would seek your reports for this work as soon as they become available.

#### Table 4.13.2

##### Issue

This has some details of sampling locations. These appear to be quite limited. Extensive surveys are necessary to help inform an understanding of the impacts to water quality.

##### Comment

Appropriate marine water quality data is required if the effects on water quality is to be properly assessed. We recommend that you consult us on the full detail of your sampling locations so that we can agree that you have adequately identified the correct points to survey.

#### Suggested solution

Additional information will need to be supplied so that we can adequately assess the impact of the thermal plume on marine water quality and we would expect this to be shared with us, for agreement, as soon as it becomes available.

#### Section 4.13.2

##### Issue

We need to see evidence to show that sediments are not contaminated.

##### Comment

For the last 50 years there have been major discharges in the area and so evidence is required to confirm this point and a baseline needs to be established. Any possible future contamination cannot be ascertained without an adequate baseline against which to make a comparison.

#### Suggested solution

Marine sediments need to be sampled and analysed. This should be both a general analysis as well as an assessment for chemicals that might have been released from the other two power stations.

#### Section 4.13.4

##### Issue

Water quality may vary greatly between years and will be dependent upon other discharges to it. In order to properly assess the impact of a new discharge into the marine environment, accurate background water quality levels are necessary.

##### Comment

We have yet to agree the scope of this monitoring work. A number of chemicals are added to the cooling and process waters of Sizewell B and the dispersal of these needs to be measured. We are aware that Sizewell B was not operating for a substantial period of time during 2010 (March until September) and so this need to be factored into the assessment as it is possible that any water quality monitoring conducted over the period 2010-2011 might provide erroneous results.

##### Suggested solution

We recommend that you consult us so that we can agree the scope of these studies and ensure that all appropriate studies have been carried out over an appropriate timeframe.

#### Sections 4.13.5

##### Issue

Impact on marine water quality, as a result of existing pollution sources and discharges.

##### Comment

You have suggested a number of potential sources of pollutants and contaminants to marine water e.g. port activities and, to a lesser extent, from sewage inputs. We will need to review your assessments and agree that all necessary aspects have been properly considered.

##### Suggested solution

We recommend that you consult us so that we can agree to the scope of your groundwater assessments and ensure that all necessary areas have been incorporated.

#### Section 4.13.6

##### Issue

Makes general assumptions about the impact that agricultural discharges are having on the quality of river water, and the impact this has on marine water quality where these rivers enter the sea. The only local river discharge to the sea is from the Minsmere River. This is quite a small discharge and is generally quite seasonal.

##### Comment

You will need to supply us with a baseline study that identifies existing impacts on water quality so that we can agree whether this is correct, and so identify the issues resulting from construction and operation of the power station.

##### Suggested solution

You state that you are undertaking studies to determine the quality of the river, so that its impact on marine water quality can be determined. We await the results of this work, so that we may decide whether we agree with your conclusions.

#### Section 4.13.7

##### Issue

Figure 4.13.1 referred to in this section - showing the designated bathing waters - is missing those at Felixstowe, Dovercourt and Walton.

##### Comment

This provides an incomplete picture and allows inappropriate conclusions to be reached.

##### Suggested solution

The map must be updated to include all bathing waters.

#### Section 4.13.8

##### Issue

The comment, as written, could be read to suggest that our monitoring relates to the new Bathing Water Directive, whereas it relates to the prediction classes under the existing Directive which is due to be replaced in 2015.

##### Comment

There could be confusion about the standards in the two Bathing Water Directives, and the current bathing water quality.

##### Suggested solution

To avoid confusion reference should be made to only one directive and we would suggest reference be made to only the revised directive.

#### Section 4.13.9

##### Issue

This refers to the water quality status of the Suffolk coastal waterbody - with a particular reference to dissolved inorganic nitrogen (DIN) concerns. We have made additional effort during 2011 and 2012 to improve the database for DIN across a number of waterbodies.

##### Comment

New data collected through winter 2012-13 may provide a more up to date picture of status and should certainly be taken into account.

##### Suggested solution

You should ensure that the latest WFD data is used following the next reporting round in 2013.

#### Section 4.13.9

##### Issue

Dissolved inorganic nitrogen in riverine and coastal waters is of concern as it is currently in excess of WFD targets.

##### Comment

We would need to agree that any discharge associated with a new power station will not increase nitrogen levels in the area.

### Suggested solution

Please provide us with details of the chemicals added to discharges, and a prediction of their resultant impact under WFD classification, and we can then assess whether these are acceptable.

### Section 4.13.10

#### Issue

The baseline water quality of the coastal area should be determined. All routine chemicals should be measured along with any specialist compounds used, or released by, the nuclear power industry. Details of exceedances should be identified and discussed. This is necessary to provide a picture of the background situation, before operation of any proposed new power station.

#### Comment

Without this information it will not be possible to establish just what impact, if any, a new power station has on marine water quality. It is important that any development of Sizewell C does not lead to any further deterioration of the coastal water.

### Suggested solution

You will need to supply a comprehensive report showing what surveys have been undertaken, details of the results and a discussion of the findings, together with an assessment of the likely impact of the new power station; so that we might agree that the baseline water quality is adequately established.

#### Issue

This is one of the most critical requirements of the Environmental Impact Assessment (EIA). A comprehensive assessment of the impact of the cooling water discharge should be undertaken, the scope of which must be agreed with us, and any other relevant stakeholders, before you proceed with your assessment.

#### Comment

Unless it is possible to fully understand the impact of cooling water discharges on receiving waters, it will not be possible to adequately assess any marine water quality impacts.

### Suggested solution

Extensive modelling of the thermal and chemical plume, that covers all potential releases made by the power station under various operating conditions, is required - preferably utilising more than one model. The modelling must also consider the in-combination effects of Sizewell B. A comprehensive report of the modelling and its predictions must then be submitted to us for agreement. This will not only help inform our view on proposals from the perspective of a Development Consent Order application, but will be necessary for pre-Environmental Permit application discussions on the appropriateness of your proposals.

## **4.14 Marine Ecology**

### *a) Environmental Baseline*

#### Section 4.14.3

##### Issue

Refers to benthic surveys already undertaken and additional information is provided in table 4.14.2. From the limited information provided, it is difficult to draw out the detail of

what has happened, and what specific data has being collected to 'validate' these findings.

#### Comment

Clarification is required on the status of existing baseline information available and also what monitoring reports are still awaited for review. Otherwise, this could cause difficulties in our review of impacts on marine water ecology.

#### Suggested solution

The scope and detail of marine monitoring work should be agreed with us. We have already requested this. Detailed and easily cross referenced data between reports should be made available to us in the lead up to and certainly by, your stage 2 consultation. As the detail of your survey work progresses, terminology should be standardised to ensure no confusion over types of surveys e.g. in Table 4.14.2 definition of sub-tidal ecology should be split and detailed as separate types of survey. In Table 4.14.1 the intertidal study is not clear on whether this is a survey of infauna or epifauna. Ideally we would suggest that you provide a clear, up-to-date and planned monitoring programme, together with a summary explaining the linkages behind these datasets to ensure clarity on the type of data being obtained.

#### *b) Key Environmental Considerations*

##### Section 4.14.17

#### Issue

This refers to entrainment of smaller organisms and expands on this in 4.14.18 by referring to entrainment of various planktonic organisms. What is not mentioned is that entrainment has also been known to affect small fish (above that of ichthyoplankton) particularly those sinuous species.

#### Comment

Entrainment may impact on more than just planktonic phases of marine organisms, it can impact the full range of small fish and fry as well as planktonic phases of both vertebrates and invertebrates and lead to an unacceptable depletion of marine fauna.

#### Suggested solution

Replication and improvement of the existing approach used at Sizewell B may not be the best solution. Planning Policy requires Best Available Techniques (BAT) to be adopted. Studies of entrainment should consider the impact on small fish. Any options for suitably mitigating design approaches should be based on this information, as well as the considered impact on planktonic organisms. Latest information on design and technological solutions to reduce fish mortality from the cooling water process should be considered in the mitigation measures.

##### Section 4.14.23

#### Issue

This mentions that discussions over the scope of surveys are continuing. However the scope of cooling water studies mentioned in Table 4.14.2 is limited. It only refers to studies associated with the existing Sizewell B intakes. It does not include the need to consider the specific impact of the Sizewell C cooling water intakes. It is expected that these will be located at a very different point offshore and operate differently to those of Sizewell B.

### Comment

The greater the distance that Sizewell C intakes are located offshore, the higher the possibility that they will have a different impact on abundance, and age group, of fish species.

### Suggested solution

Appropriate consideration should be given to the different location and operating regime of the Sizewell C intakes in your planned studies and assessments. Certainly there should not be reliance on studies of Sizewell B impingement and entrainment experiences alone.

## **4.17 Radiological Effects**

In view of the high level nature of the Environmental Report we have limited comments on this matter at this time. We will expect to become more fully involved as your design progresses through a pre-Environmental Permit application for radioactive waste discharges.

## **5.0 Off-site associated developments site options**

### *5.2 General Environmental Considerations*

We note that all associated development sites are located in Flood Zone 1 and that early consideration is being given to the use of Sustainable Drainage Systems (SuDS) for surface water disposal.

### *Surface Water Quality/Pollution Prevention & Control*

#### Section 5.2.1

##### Issue

Generally there are no watercourses on, or near, the sites. Groundwater in the area of development will need to be protected from contamination, and in - some instances - ground conditions will not be suitable for the use of soakaways.

### Comment

This may present difficulties in the disposal of surface water, or sewage effluent.

### Suggested solution

We would expect to agree ways of dealing with site drainage discharges, that do not cause environmental harm, and early discussions will enable this.

#### Section 5.2.4

##### Issue

Many existing Sewage Treatment Works are either close to, or at capacity, which means that the disposal of sewage effluent to them may not be possible, especially for the accommodation campus. Site specific package sewage treatment works may well be required.

All proposed locations for the accommodation campus lie close to, or within, the catchment of the Minsmere River. This river system currently contains phosphorus concentrations in excess of the WFD and/or Habitats Directive target. The discharge of additional effluent to this river, or a tributary of it, may well worsen the situation.

### Suggested solution

We recommend that you discuss your proposals with both us, and Anglian Water, as soon as possible to agree how sewage disposal might be achieved. It is important that these discussions are held before you make a final decision on the location of associated development sites - especially the campus accommodation.

### *Groundwater*

#### Section 5.2.5

##### Issue

This explains that further investigation is still required to define ground conditions.

##### Comment

Until this work is complete it will not be possible to establish the impact of your development proposals on ecology, surface water flows, groundwater flooding and WFD status. Sites may appear acceptable, but when a review of groundwater is completed, they may then appear not so. Also, the scoping of the environmental statement is constrained by this lack of information.

### Suggested solution

Further investigation of groundwater conditions must form part of the assessment of a site's suitability for development as it will have the potential to affect the choice of surface water disposal design and may indicate unacceptable ecological impacts.

## **Section 5.3 Campus Accommodation**

### Issue

We understand that a temporary 'campus' will be provided to accommodate up to 3,000 construction workers during the construction phase. Arrangements for the satisfactory disposal of foul water will need to be made.

### Comment

Given the limited capacity at Leiston Sewage Treatment Works and issues over upgrading at the works, it is likely that provision will need to be made for an on-site package sewage treatment plant(s) for foul water disposal. This may require that treated sewage effluent enters a watercourse running through sensitive nature conservation designated wetland areas.

### Suggested solution

Options for the disposal of foul water will need to be considered, assessed and agreed, with particular focus on the capacity of the receiving watercourse to handle additional flows and impacts on ecological aspects.

### Issue

The creation of hardstanding areas for the campus accommodation site is likely to generate additional surface water run-off.

### Comment

There is the potential for increased flood risk associated with this surface water run-off.

### Suggested solution

A FRA will be required. The FRA will need to ensure the control of surface water, and we note that all three sites indicate areas for balancing ponds which can be used in the management surface water.

### Section 5.3.8

This refers to a small former sand, or clay working, which would need to be in-filled to maximise development of the site. Extra consideration should be given to the depth of infill required and the materials to be used. If waste is proposed as an infill material then a landfill permit would be required, as this would be considered a waste disposal operation.

### Section 5.3.17

#### Issue

Campus option 2 Sizewell Gap. This would be our least preferred option for the campus site as it is situated between the Leiston-Aldeburgh SSSI /Sandlings SPA and Sizewell Marshes SSSI.

#### Comment

The siting of the campus at this location would have a negative effect on the connectivity between these sites. This 'link' is an important wildlife corridor for European protected species e.g. otters. Any adverse affect on these areas is contrary to the recommendations in 'Making Space for Nature'<sup>4</sup> which states that opportunities to enhance connections between existing wildlife sites should be sought.

### Suggested solution

This is a less attractive option due to the issues highlighted above. Should this option be chosen then comprehensive ecological surveys are required and appropriate mitigation must be incorporated.

## **5.4 Park and Ride and Freight Management Facilities**

All of these sites will need to consider the potential for increased flood risk associated with surface water run-off. A FRA will be required. The FRA will need to ensure the control of surface water, and we are pleased to see areas indicated for balancing ponds which can be used in the management of surface water.

### Southern Park & Ride sites:

Whilst the majority of these three sites are located in Flood Zone 1, option 2 is close to the edge of the Flood Zone. In section 5.4.53 reference is made to the north-east of the site being located in Flood Zone 3. This appears to be a typo as it is actually the north-west corner. The parking area should therefore be restricted to the flatter higher land on the eastern half of this site.

The site for option 3 contains a significant area shown to be at risk of flooding from surface water sources. Additional care would therefore need to be given to the management of surface water on this site.

---

<sup>4</sup> Lawton, J.H., Brotherton, P.N.M., Brown, V.K., Elphick, C., Fitter, A.H., Forshaw, J., Haddow, R.W., Hilborne, S., Leafe, R.N., Mace, G.M., Southgate, M.P., Sutherland, W.J., Tew, T.E., Varley, J., & Wynne, G.R. (2010) *Making Space for Nature: a review of England's wildlife sites and ecological network*. Report to Defra.

### Freight management facilities

The site for option 2 contains an area shown to be at risk of flooding from surface water sources. Additional care would therefore need to be given to the management of surface water on this site.

## **5.6 Freight by Rail**

### Section 5.6.17

#### Issue

The red route of option b. crosses the Leiston Ditch main river and its associated Flood Zone.

#### Comment

This could potentially create off-site flood risk impacts.

#### Suggested solution

The design should seek to avoid any obstruction to in channel flow conveyance, or any loss to floodwater flow routes and storage. Detailed hydraulic modelling may be required to determine if there are any adverse off site impacts associated with this proposal. Prior written consent from us is required for any proposed works or structures affecting this main river. Consent is also likely to be required from the IDB for works to any ordinary watercourses.

## **5.7 A12 Improvements – Farnham Bend**

The proposed route raises ecological and flood risk concerns.

#### Issue

The proposed route crosses the River Alde, which is a European Eel migratory route, and an area of woodland/grassland which contains a number of interconnecting ditches and ponds. It is likely that this area provides suitable habitat for water vole and otter and that the belt of woodland is likely to provide habitat for bats. The ponds in the area may well be suitable for amphibians.

#### Comment

There is the potential for ecological harm to habitat and species.

#### Suggested solution

This is a less attractive option. In the event that this is chosen then comprehensive ecological surveys are required and appropriate mitigation measures must be incorporated.

#### Issue

The bypass would cross the River Alde floodplain - Flood Zone 3, as designated on our Flood Map - an area of high flood risk.

#### Comment

This could potentially increase the risk of flooding elsewhere. We also have a flow gauging station just downstream, adjacent to the A12 road bridge, which might be adversely affected.

#### Suggested solution

The carriageway and bridge will need to be designed so as to ensure the minimum impact on the river, its floodplain and the ecology of the area. It should not include any

in-channel structures and must maintain the function of the floodplain. Road drainage should be directed to the adjacent marshes rather than discharging directly to the main river channel. Detailed hydraulic modelling may be required as part of the FRA to ascertain if there are any adverse off site impacts associated with this proposal.

Prior written consent from us is required for any proposed works or structures affecting the River Alde, designated a 'main river'. Consent is also likely to be required from the IDB for any works affecting ordinary watercourses in this vicinity.

## **5.8 Visitors centre**

### Section 5.8.3 – Option 1: Lover's Lane

#### Issue

This is not preferred as it is situated between the Leiston-Aldeburgh SSSI /Sandlings SPA and Sizewell Marshes SSSI.

#### Comment

The siting of the Visitors centre at this location could have a negative effect on the connectivity between these sites. This is again contrary to the recommendations in 'Making Space for Nature' which states that opportunities to enhance connections between existing wildlife sites should be sought. Noise and light might also disturb water dependent species, such as otters and water voles which we understand are present.

#### Suggested solution

Should this option be chosen then comprehensive ecological surveys are required and appropriate mitigation must be incorporated.

### Section 5.8.5 - Option 2: Sizewell Beach

#### Issue

The access is located in the Flood Zone as well as being adjacent to the sand dunes.

#### Comment

Visitors to the centre could be exposed to the hazards associated with flooding.

#### Suggested solution

An FRA will be required to assess the risk to the centre, its staff and visitors. This must demonstrate that they are not exposed to the hazards associated with flood water, over the lifetime of the development.

Prior written consent from us is required for any proposed works or structures affecting the sea defences.

### Section 5.8.8 - Option 3: Goose Hill

#### Issue

This is our least preferred option due to its proximity to designated sites (SSSI, SPA, and SAC) and it is also located within Sizewell Levels County Wildlife Site. These areas have high ecological value and support a large number of European Protect Species, from rare birds to otters and water voles, and also act as an important wildlife corridor for these species.

### Comment

There is the potential for adverse effect on the ecology of this important wildlife corridor which might include species protected under European legislation such as bats, birds, otters and water voles.

### Solution

Should this option be chosen then comprehensive ecological surveys are required and appropriate mitigation must be incorporated.

## **Environmental Report Appendix A – Habitat Regulations and WFD**

### Section 8.1.8

Where waterbodies are designated as artificially or heavily modified (A/HMWB) the WFD objective is to achieve good ecological **potential** rather than status. This distinction<sup>5</sup> is made because these waterbodies are inherently unnatural and have previously, or are currently subject to significant anthropogenic, geomorphological forcing. Making this distinction allows for the recognition that some waterbodies perform a particular function such as navigation, recreation, land drainage, that inhibits their capacity to achieve ecological objectives. Because the effect of human influence is that such artificially, or heavily modified, waterbodies will often be morphologically homogeneous and lacking in hydrological diversity, the emphasis is on seeking improvement.

### Section 8.1.9

In the area of the indicative Sizewell C main development site boundary the principal fluvial waterbody is the Leiston Ditch main river and Minsmere Old River (GB105035046270). This waterbody is designated as Heavily Modified (for Land Drainage) and is currently at Poor ecological potential. Any other waterbodies (whether coastal, fluvial or otherwise) that are likely to be affected by the works must also be considered within your WFD compliance assessment.

### Section 8.1.10

Since much of the information collected to conduct an EIA will be of use in a further WFD compliance assessment, it is practical and efficient to combine the information gathering process of these assessments.

### Section 8.1.16

Advice on suitable mitigation measures within fluvial waterbodies, which we consider will assist you nearer the time that detailed design work is carried out, is available via the WFD Mitigation Measures Manual - <http://evidence.environment-agency.gov.uk/FCERM/en/SC060065.aspx>

---

<sup>5</sup> In WFD terms this is more properly a designation.

## **Appendix B - Comments on the Transport Strategy**

### **Movement of Freight by Rail - Route Options for Extending the Saxmundham - Leiston Branch Line into the Sizewell C Construction Site**

#### Issue

Temporarily extending the existing rail line into the construction site – 3 route options.

#### Comment

Depending on the option selected, this could include the removal of existing habitat features such as trees and hedgerows and, in the case of the red route, the loss of some habitat at Sizewell Levels County Wildlife Site. It may also be necessary to culvert existing watercourses that flow into the SSSI with an associated impact to ecology and land drainage. There is also the potential for considerable disturbance to wildlife during both construction and operation.

#### Suggested solution

Given the limited number of additional freight movements that this option enables, and the associated environmental impact (whichever route may be chosen), the proposal to extend the rail line into the development site must be fully justified.

## **Appendix C – General overarching comments**

Applicable to the main site and associated developments

We recommend that you develop the following strategies and that they are used to make decisions and influence design.

### Waste Management Strategy

A strategic, and sustainable, approach to waste management for the main site and associated development sites should be developed and adopted. Various options can be considered and these are outlined below:

### CL:AIRE (Contaminated Land: Application in the Real Environment)

The CL:AIRE Industry Code of Practice (ICOP) allows for the reuse of excess soils and engineering material at other sites. The ICOP document explains how material can be treated, remediated and used in the construction phase of a development project. Geochemical and geotechnical requirements must be met and this should be demonstrated with appropriate analysis. There are four factors that need to be considered, which are as follows:

1. Protection of human health and protection of the environment
2. Suitability for use, without further treatment
3. Certainty of use
4. Quantity of material

For further information on the application of these principles, please refer to CL:AIRE Definition of Waste: Development Industry Code of Practice. [www.claire.co.uk](http://www.claire.co.uk)

### Environmental Permitting Regulations 2010

If waste needs to be imported, or treated on the site, then this will fall under the control of the Environmental Permitting Regulations 2010. Using waste as part of construction triggers a number of permitting options that can be considered. These depend on the intended use of the waste, the quantities and the type of wastes involved. One option is to use the material in a recovery operation.

To permanently deposit waste as a recovery operation, a ‘deposit for recovery’ environmental permit will be required. Construction, landscaping and habitat restoration schemes can be considered as deposit for recovery operations. All deposit for recovery operations are assessed in accordance with Environment Agency Guidance RGN 13: Defining Waste Recovery: Permanent deposit of waste on land, and will require a waste recovery plan to be submitted for approval prior to any permit application. In assessing the waste recovery plan we will need to be satisfied that the proposed operation is recovery, and not a disposal operation.

Site Waste Management Plans Regulations 2008 (as amended) require the preparation of a site waste management plan (SWMP)<sup>6</sup> for any construction project with an estimated capital cost of over £300,000. The purpose of the SWMP is to identify opportunities to design out waste; as well as identify the types and quantities of waste likely to be produced during construction, the opportunities for sustainable management of the waste identified and to monitor and report on the actual management of these wastes throughout the construction period.

---

<sup>6</sup> It should also be noted that section 5.14.6 of the National Policy Statement EN-1 states that an applicant should prepare a Site Waste Management Plan.

### Drainage strategy

The surface, and particularly the foul water, sewerage systems in the area will need to be reviewed to examine their capacity for increased drainage discharges.

### Code of Construction Practice

This approach, if adopted, should include details of pollution prevention measures to control the risk of pollution during construction and operation and avoid adverse impact on the environment. This document should also highlight environmental incident management procedures, classification and reporting. Suitable measures e.g. oil interceptors should be incorporated into design proposals.

We publish Pollution Prevention Guidelines (PPGs) that provide advice and guidance on good environmental practice across a range of activities. It is likely that a number of these PPGs will be pertinent to construction activities at the main site and associated development sites. We recommend our PPGs are used to inform good environmental practice across construction activities at the more detailed design stage.

All PPGs can be accessed using the following web link: -

<http://www.environment-agency.gov.uk/business/topics/pollution/39083.aspx>

### WFD

In order to be compliant with the WFD it will be necessary to demonstrate that construction of the Sizewell C power station, and associated development sites, do not cause deterioration in the status, or prevent the achievement of good ecological potential, of the Leiston Ditch main river and Minsmere Old River. Additionally, as well as WFD compliance within the freshwater ecosystem, WFD compliance will be required within the Suffolk coastal waterbody.

### Water Resources/Abstraction Licensing

There are several types of abstraction licence that may be required as a result of proposals. Confirmation can be provided once we have received further information. For now, we can advise that these may include:

- Full abstraction licences – which are required where water is ‘used’ for a purpose, even if it is later returned to the environment (e.g. concrete production).
- Transfer licences – which may be required where water is moved from one source to another, or from one part of a source to another part of the same source, with no intervening use (e.g. dewatering if discharged back to the environment, and not a sewer).
- Temporary licences – which may be used where abstraction will only take place for 27 consecutive days or less (e.g. testing of pipelines, or other short term activities involving the use of water).
- Impoundment licences – which may be required where any flows are impeded, but this seems less likely to apply to these proposals.

The next cycle of the East Suffolk Catchment Abstraction Management Strategy (CAMS) is expected to be published in, or around, March 2013. **This will re-confirm that water resources in this area are likely to be limited.** In view of this, where water supply required for operational purposes is likely to be significant - for instance that needed to generate steam for the turbines - and may therefore have an impact on

existing licensed water abstractions<sup>7</sup>, we recommend early discussions with Essex & Suffolk Water with a view to determining whether sufficient water supplies are available.

In order to reach suitable foundation conditions, deep excavations may be required, and this may well involve de-watering which is currently exempt from the need for an abstraction licence; however, during the final stages of the implementation of the Water Act 2003 (also known as the New Authorisations Project) the exemption on dewatering will be lifted. As it stands, regulations to implement 'new authorisations' (including dewatering) are due in late 2013.

Effects of any de-watering on nearby local abstraction [protected rights] will need to be considered. We will not be able to issue any abstraction licences which derogate other users of water. Two licences have been identified (Ogilvie 7/35/03/\*G/0089A and A W Mortimer Farms 7/35/03/\*S/0075), plus there is an unlicensed well point at the Sizewell site itself. Please note that this was not a comprehensive search - we just wish to raise the issue that you will need to consider existing abstraction rights.

The effects of de-watering on WFD lake waterbody GB905001001830 (Sizewell Marshes) will need to be considered. A future WFD compliance assessment will need to establish this (as outlined in Appendix A of the Environmental Report). It would not be possible to grant an abstraction licence that could cause deterioration in WFD status.

One of the temporary structures listed in the consultation document is a concrete batching plant, which is likely to need large amounts of freshwater. We believe that operational freshwater requirements of the existing site have historically come from an Essex & Suffolk Water potable supply. You will need to establish whether Essex & Suffolk Water can meet these further requirements for concrete manufacture or whether a further supply will need to be created – requiring an abstraction licence. As there are no surface water supplies on the site (and rights of access are required for any abstraction licence) and the current CAMS groundwater unit status is over-abstracted, additional water may need to come from a water rights trade with a neighbouring abstraction.

### Coastal Protection

There will be consenting requirements for proposed coastal protection measures, and flood defences, and discussions on these matters will be necessary. Consent may be required under the Coast Protection Act 1949 from Suffolk Coastal District Council as the Maritime District Council, and/or from us through the consenting process under the Anglian Region Land Drainage and Sea Defence Byelaws for works affecting/adjacent to flood defences.

### Installations/Combustion

With regard to the standby diesel generators.. An Environmental permit is required for the combustion emissions and in this connection you will need to assess the impact of emissions associated with these diesel generators for a distance of up to 15 km away.

---

<sup>7</sup> Section 5.15.3 of the National Policy Statement requires an assessment of 1) existing water resources affected by the proposed project and the impacts of the proposal on water resources, noting any relevant existing abstraction rates, proposed new abstraction rates and proposed changes to abstraction rates including any impact on or use of mains supplies and reference to Catchment Abstraction Management Strategies; 2) existing physical characteristics of the water environment including quantity and dynamics and any affect that the proposed project may have by way of physical modifications to these characteristics; and 3) any impacts on water bodies or protected areas under the WFD and Source Protection Zones around potable groundwater abstractions.

### Biodiversity Action Plan

There are a number of BAP protected species within 15km of the site, notably protected lichens, Greater Water Parsnip and Eels. These are not currently listed within the Environmental Report. Impacts on BAP species in the vicinity of those associated development sites that are chosen as preferred options will need to be addressed in future EIA work. There may be an opportunity to restore and enhance these BAP species through partnership project working with the local wildlife trust.

### Sustainable Construction/Design

Climate change is one of the biggest threats to our future and will have far-reaching effects on our economy and society. We need to improve our resilience and adaptation to the effects, particularly with regards to already stretched environmental resources and infrastructure such as water supply and treatment, water quality, flood risk, coastal erosion, waste disposal facilities and aquatic biodiversity.

### Water Efficiency

Over the next 20 years, demand for water is set to increase substantially. Yet there is likely to be less water available - climate change is forecast to make it drier and the general direction of government policy is likely to lead to tighter controls on abstraction. The overall picture is one of ever increasing demand for an ever scarcer resource, and less water will need to go further. We are keen to see developments proposed that are as water efficient and climate change resilient as possible.

Due to water pressures in the region we consider it is particularly important that water efficiency measures are incorporated into your development proposals. You should consider the use of water efficient systems and fittings such as dual-flush toilets; water butts; water-saving taps and showers; and appliances with the highest water efficiency rating as a minimum. Greywater recycling and rainwater harvesting should also be considered.

Applicants are advised to refer to the following for further guidance:

<http://www.environment-agency.gov.uk/homeandleisure/drought/38527.aspx> ,  
<http://www.water-efficient-buildings.org.uk/> and  
<http://www.savewatersavemoney.co.uk/>.

### *Save water, Save energy*

Energy and Water efficiency are inherently linked. Reducing water use of a building will also increase its energy efficiency. Approximately 24% of domestic energy consumption in the UK goes to heating water (DTI 2002). This excludes space heating. In situations where more efficient hot water fixtures and fittings are installed, major efficiencies will be seen.

Development should seek to minimise the use of resources and the production of waste by incorporating, for example, passive systems using natural light, air movement and thermal mass, as well as using energy produced from renewable sources.

New commercial / industrial developments are encouraged to meet BREEAM standards of 'very good' or more. We recommend that developers are guided towards using equipment on the Water Technology List which contains products which have met an approved water efficiency eligibility criteria. These measures will not only help the environment, but directly reduce consumer water and energy bills and reduce carbon dioxide emissions. Businesses may also be eligible for tax savings through Enhanced Capital Allowance (ECA) if they invest in these products.

The payback following investment in water saving devices is often higher in commercial units than residential due to the higher frequency of use. Simple measures such as urinal controls or waterless urinals, efficient flush toilets and automatic or sensor taps are therefore very effective. Likewise investment in water recycling schemes is also more viable in business settings.

Support for the incorporation of sustainable design and construction measures is provided by Development Management Policy DM24 – Sustainable Construction in the submitted version of the Suffolk Coastal Core Strategy & Development Management Policies Development Plan Document and paragraphs 95 and 97 of the NPPF. On the theme of sustainable development, Strategic Policy SP13 – Nuclear Energy in the aforementioned Development Plan Document advocates a sustainable procurement policy, which we endorse.

## Appendix D - Roles and responsibilities of the Environment Agency

### *1. Principal duties*

We are an executive non-departmental public body established under the Environment Act 1995. We advise government, with principal aims to protect and improve the environment, and to promote sustainable development. We play a central role in delivering the environmental priorities of central government and the Welsh Government<sup>8</sup> through our functions and roles. We are also an adviser to local planning authorities in our role as a statutory consultee in respect of particular types of development, as listed in Schedule 5 to the Development Management Procedure Order 2010. For the purposes of this consultation which falls within the Nationally Significant Infrastructure Projects rules under the Planning Act 2008, we are a statutory interested party.

We take action to conserve and secure proper use of water resources, preserve and improve the quality of rivers, estuaries and coastal waters and groundwater through pollution control powers and by regulating discharge consents. We have regulatory powers in respect of waste management and remediation of contaminated land designated as special sites. We also encourage remediation of land contamination through the planning process.

We are the principal flood risk management operating authority and have the power (but not a legal obligation) to manage flood risk from designated main rivers<sup>9</sup> and the sea. We are also responsible for increasing public awareness of flood risk, flood forecasting and warning and have a general supervisory duty for flood risk management. As of 2008 we also have a strategic overview role for all flood and coastal erosion risk management.

### *2. Our role in Nuclear New Build*

We are responsible for regulating the nuclear industry on environmental matters such as discharge and disposal of radioactive wastes, discharges of cooling water to sea and discharges of combustion emissions to air from standby generators. These activities will all require our discharge permits before a power station can be operated. Associated developments may also require permits for discharges - such as temporary sewage treatment works. It is expected that a number of other environmental permits will be required for discharges related to actual construction activities on both the main site and the associated development sites.

Our role, as one of the Nuclear Regulators in the Development Consent Order process, is set out in Section 2.7 of the National Policy Statement (NPS) for Nuclear Power Generation (EN6) Volume 1 of 2.

We, with the ONR, (who regulate safety and security), will make sure that any new nuclear power stations being built - meet high standards of safety, security, environmental protection and waste management.

The permitting and licensing of nuclear power stations by the Nuclear Regulators are separate regulatory processes with which companies who wish to operate nuclear power stations must comply.

---

<sup>8</sup> Pending the formation of Natural Resources Wales in April 2013

<sup>9</sup> Rivers designated as those for which we have a permissive powers to maintain, for land drainage purposes

### *3. Other duties*

We are the competent authority in England and Wales for the purposes of the WFD, in conjunction with (as necessary) the Secretary of State (for DEFRA). Regulation 3(1) of The Water Environment (WFD)(England and Wales) Regulations 2003 requires that the Secretary of State and the Environment Agency must exercise their relevant functions so as to secure compliance with the requirements of the Directive.

We also have statutory duties under section 6 of the Environment Act 1995 to generally promote the conservation of fauna which are dependent on an aquatic environment to the extent we consider desirable and to 'maintain, improve and develop' salmon fisheries, trout fisheries, freshwater fisheries and eel fisheries in England and Wales.