The Sizewell C Project

6.11 Volume 10 Project-wide, Cumulative and Transboundary Effects

Chapter 5 Transboundary Effects

Appendix 5A: Long Form Transboundary Screening Matrix

Revision: 1.0

Applicable Regulation: Regulation 5(2)(a)

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Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Contents

Tables

Plates

None provided.

Figures

None provided.

1. Long Form Transboundary Screening Matrix

1.1.1 SZC Co. has carried out a screening exercise using the matrix in Annex 1 of Advice Note Twelve (Ref. 1.1). This is presented in **Table 1.1**.

Table 1.1: Long Form Transboundary Screening Matrix

Relevant Consideration	Commentary
Characteristics of the Development	
Size of the development	Sizewell C will be a modern nuclear power station United Kingdom European Pressurised Reactor (UK EPR™) units with an expected net electrical output of approximately 1,670 megawatts (MW) per unit, giving a total site capacity of approximately 3,340MW. The land area of the permanent development at the main development site would be approximately 371.7 hectares (ha). Offshore structures will be required for intake and discharge of cooling water, extending up to approximately 3km offshore.
Use of natural resources	Cooling water will be drawn from and returned to the North Sea. The principal supply of water for the Sizewell C Project will come from mains water, provided by Essex and Suffolk Water. Further information on the operational water supply options is provided in the **Planning Statement** (Doc Ref 8.4). Materials generated during the construction works will be re-used where possible to create landscape bunds and other earthwork features. This process is governed by the Materials Management Strategy (**Appendix 3B** of **Volume 2** of the **Environmental Statemet** (**ES**)) Uranimum for reactor fuel will be imported to the UK from outside the European Economic Area.
Production of waste	Low level and intermediate level waste will be produced during normal operation of the Sizewell C power station. Management and disposal of these wastes is strictly regulated. These wastes will be stored on site in secure facilities or dispatched to authorised disposal facilities in the UK. Further details on the management arrangements for low level waste are provided within **Chapter 7** of **Volume 2** of the **ES**. Spent nuclear fuel (which is not classified as waste) will be managed in accordance with Government policy which requires secure storage on site until a national geological disposal facility is in place. Further details on the management arrangement of spent fuel are provided within **Chapter 7** of **Volume 2** of the **ES**. Conventional wastes will arise from the operation of the site typical of an industrial facility of a comparable scale. These

Relevant Consideration	Commentary
	will be minimised by applying the waste hierarchy and will be disposed of in accordance with applicable environmental protection legislation and the **Conventional Waste Management Strategy** (**Appendix 8A** of **Volume 2** of the **ES**). Construction waste be minimised by applying the waste hierarchy through the application of the **Conventional Waste Management Strategy** (**Appendix 8A** of **Volume 2** of the **ES**) to ensure it managed in accordance with Government policy.
Pollution and nuisances	An Environmental Impact Assessment has been carried out to assess all likely significant impacts of the Sizewell C Project on air quality, noise and vibration, land quality, groundwater, surface water and the marine environment arising from activities during construction, operation and removal and reinstatement phases (where necessary). Mitigation measures to avoid, reduce and mitigate likely significant effects from pollution and nuisances are detailed wihin the each of the technical chapters of **Volumes 2** to **9** (where relevant) and, where relevant, are secured through the **Construction Code of Practice** (**CoCP)** (**Doc Ref. 8.11**).
Risk of accidents	The UK Government believes that new nuclear power stations would pose very small risks to safety, security, health and proliferation (of nuclear materials). Government also believes that the UK has an effective regulatory framework that ensures that these risks are minimised and sensibly managed by industry (Source: White Paper on Nuclear Power, January 2008 (Ref. 1.2)). Nuclear safety is regulated by the Office for Nuclear Regulation (ONR) through a Nuclear Site Licence which places conditions on the Licensee to assure the safety of all aspects of power station construction, operation and decommissioning. This Licence must be in place ahead of construction of safety critical parts of the plant. The risk of accidents and possible radiological impacts on the airspace, land, water and humans in other EU member states is also covered by the Euratom Treaty obligations. The proposed UK EPR™ design of reactor has been the subject of a regulatory justification process. The Secretary of State (SoS) decided that the generation of electricity using the UK EPR™ is justified under the Justification of Practices Involving Ionising Radiation Regulations 2004. The SoS considers that the likelihood of an accident or other incident occurring at an UK EPR™ giving rise to a release of radioactivity is very small. The Major Accidents and Disasters assessment assesses the

Relevant Consideration	Commentary
	risk associated with hazards and threat from on site and off-site sources during the construction and operation of the Sizewell C Project. This assessment provides details of the mitigation measures that are in place to reduce the likelihood of a risk event occurring. Further details of this assessment are provided within **Volume 2**, **Chapter 27** of the **ES**.
Use of technologies	Sizewell C will comprise two modern pressurised water reactors, using nuclear fission of uranium to produce heat which is transferred to steam that powers conventional turbines and generators.
Geographic Area	
What is the extent of the area of a likely impact under the jurisdiction of another conutry	The **Shadow Habitats Regulations Assessment Report** (HRA) (Document Ref. 5.10) identified that the potential for likely significant effects on European sites in other European Economic Area States are through effects on mobile species (Twaite shad) that may be within the zone of influence of the Sizewell C Project. The **Shadow HRA Report** concluded that for all European sites with migratory fish as qualifying features, an adverse effect on the integrity can be excluded due to the construction and operation of the Sizewell C Project.
Location of Development	
What is the existing use of the site	The Sizewell C Project site comprises areas of Sizewell A and Sizewell B nuclear power stations, existing highway, arable land, grassland, some areas of woodland and part of the marine environment used by recreation vessels and for commerical fishing.
What is the distance to another European Economic Area state? (Name European Economic Area state)	Distances to the closest European Economic Area states from the Sizewell C Project are: 380km to German territorial waters; 119km to Belgian territorial waters; 122.5km to Netherlands territorial waters; and 112km to French territorial waters.
Environmental Importance	
Are particular environmental values (eg protected areas – name them) likely to be affected?	Stage 2 of the **Shadow HRA Report** (Document Ref. 5.10) concluded that of the 29 European sites for which likely significant effects could not be excluded in the HRA Stage 1 screening exercise, an adverse effect on integrity could not be excluded for only two sites - the Minsmere-Walberswick SPA and Ramsar site, due to noise and visual disturbance on

<table>
<tr><th>Relevant Consideration</th><th>Commentary</th></tr>
<tr><td></td><td>the breeding marsh harrier qualifying interest feature during the construction phase, which does not represent a transboundary effect. Adverse effect on integrity can be excluded for all other European sites.</td></tr>
<tr><td>Capacity of the natural environment.</td><td>Adequate (demonstrated through the EIA process). The National policy in the form of the National Policy Statement for Nuclear Power Generation (EN-6) (NPS EN-6) also identifies the Sizewell site as a potentially suitable location for a new nuclear power station. This followed a Strategic Siting Assessment (SSA) of eleven ‘nominated sites’ to identify the eight included in NPS EN-6 as potentially suitable for the deployment of new nuclear power stations by the end of 2025.

The “specific and relevant policies” referred to in National Policy Statement for Energy (EN-1) relate to the generic impacts set out in that NPS and the nuclear impacts set out in NPS EN-6. All of the generic and nuclear impacts have been assessed within the ES. Although there are some residual adverse effects that cannot be avoided or fully mitigated, none are of such magnitude that they could come close to outweighing the key benefit of the scheme – the delivery of new nuclear power generating capacity. As summarised in Chapter 5 of this volume, none of the likely transboundary effects of the Sizewell C Project on other European Economic Area states are considered to be significant.</td></tr>
<tr><td>Wetlands, coastal zones, mountain and forest areas, nature reserves and parks, Natura 2000 sites, areas where environmental quality standards already exceeded, densely populated areas, landscapes of historical, cultural or archaeological significance.</td><td>Sites of European / international potentially affected by the Sizewell C Project and, therefore, which were scoped into the HRA process comprise:
<table>
<tr><th>No.</th><th>Site Name</th><th>Designation</th></tr>
<tr><td>1</td><td>Alde-Ore and Butley Estuaries</td><td>SAC</td></tr>
<tr><td>2</td><td>Alde-Ore Estuary</td><td>SPA</td></tr>
<tr><td>3</td><td>Alde-Ore Estuary</td><td>Ramsar site</td></tr>
<tr><td>4</td><td>Benacre to Easton Bavents Lagoons</td><td>SAC</td></tr>
<tr><td>5</td><td>Benacre to Easton Bavents</td><td>SPA</td></tr>
<tr><td>6</td><td>Deben Estuary</td><td>SPA</td></tr>
<tr><td>7</td><td>Deben Estuary</td><td>Ramsar site</td></tr>
<tr><td>8</td><td>Dew’s Ponds</td><td>SAC</td></tr>
<tr><td>9</td><td>Humber Estuary</td><td>SAC</td></tr>
<tr><td>10</td><td>Minsmere to</td><td>SAC</td></tr>
</table></td></tr>
</table>

Relevant Consideration	Commentary

	Walberswick Heaths and Marshes	
11	Minsmere-Walberswick	SPA
12	Minsmere-Walberswick	Ramsar site
13	Orfordness-Shingle Street	SAC
14	Outer Thames Estuary	SPA
15	Sandlings	SPA
16	Staverton Park and the Thicks, Wantisden	SAC
17	Southern North Sea	SAC
18	Stour and Orwell Estuaries	SPA
19	Stour and Orwell Estuaries	Ramsar site
20	The Wash and North Norfolk Coast	SAC
21	Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent	SCI
22	Unterweser	SCI
23	Weser bei Bremerhaven	SCI
24	Nebenarme der Weser mit Strohauser Plate und Juliusplate	SCI
25	Schleswig-Holsteinisches Elbästuar und angrenzende Flächen	SCI
26	Unterelbe	SCI
27	Mühlenberger Loch/Neßsand	SCI
28	Rapfenschutzgebiet Hamburger Stromelbe	SCI
29	Hamburger Unterelbe	SCI
30	Elbe zwischen Geesthacht und Hamburg	SCI

Potential impacts and Carrier	
By what means could impacts be spread (ie what pathways)?	Airborne or waterborne spread of impacts is possible. However, any spread of impacts is already considered and assessed as part of the EIA process.

Relevant Consideration	Commentary
Extent	
What is the likely extent of the impact (geographical area and size of the affected population)?	As identifed within **Chapter 4** and **Figures 1.1 and 4.1** of this volume of the **ES**, all Zones of Influence for the assessments do not extent beyond UK boundaries. The **Shadow HRA Report** (Document Ref 5.10) identifies that effects on migratory fish species that are qualifying interest features of some mainland European SACs may occur when in UK territorial waters and within the Zone of Influence of the Sizewell C Project. The Shadow HRA concludes that adverse effect on integrity can be excluded for these mainland European SACs.
Magnitude	
What will the likely magnitude of the change in relevant variables relative to the status quo, taking into account the sensitivity of the variable?	As identified within Chapter 5 of this volume, other than potential effects on migratory fish, no environmental changes would occur in any other European Economic Area state. The **Shadow HRA** (Document Ref. 5.10) concludes that adverse effect on integrity can be excluded for these mainland European SACs.
Probability	
What is the degree of probability of the impact?	There is no probability of significant transboundary effects during construction or during the normal operation of the Sizewell C Project. Accidental release of radiation has been assessed within **Volume 2**, **Chapter 25**, which concludes that there would be no significant transboundary effects.
Is the impact likely to occur as a consequence of normal conditions or exceptional situations, such as accidents?	
Duration	
Is the impact likely to be temporary, short-term or longterm?	Non-significant transboundary effects would occur through the construction and operational phases of the Sizewell C Project.
Is the impact likely to relate to the construction, operation or decommissioning phase of the activity?	
Frequency	

Relevant Consideration	Commentary
What is likely to be the temporal pattern of the impact?	Non-significant transboundary effects would occur through the construction and operational phases of the Sizewell C Project. Further detail on these is provided in **Chapter 5** of this volume of the **ES**.
Reversibility	
Is the impact likely to be reversible or irreversible?	Impacts on the marine environment, including migratory fish are, at the time of writing, considered to be permanent. This is dependant on the approach for decomissioning. All other non-significant transboundary effects would be temporary and reversible.
Cumulative impacts	
Are other major developments close by?	Other major developments in proximity to the Sizewell C Project include, Sizewell A and Sizewell B Nuclear Power Stations. There are no other identified projects, plans, programmes that would materially contribute to significant transboundary effects. The operation of Sizewell B and decommissioning of Sizewell A is considered to form part of the baseline scenario presented within **Chapter 5** of this volume and techncial assessments presented witin **Volume 2** of the **ES.** The **Shadow HRA Report** (Document Ref. 5.10) concludes that no other plans or projects screened in to the in-combination assessment were identified that have the potential to result in an adverse effect on the integrity of any European site when considered in-combination with the Sizewell C Project.

References

1.1 Planning Inspectorate (PINS) (2018), Advice Note Twelve: Transboundary Impacts and Process

1.2 Department of Business, Enterprise & Regulatory Reform (2008), White Paper on Nuclear Power, January 2008, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/228944/7296.pdf [Accessed December 2019]