



Likely significant effect (LSE) screening

Identification of sites and features potentially at risk

July 2022

Version 1

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1. Introduction

The following document provides 30 tables; one for each site initially identified as potentially being at risk from the operational activities of the proposed Sizewell C (SZC) nuclear power station. Three operational permits have been applied for:

- combustion activities (CA) permit application (reference: EPR/MP3731AC/A001)
- radioactive substances activities (RSA) permit application (reference: EPR/HB3091DJ/A001)
- water discharge activities (WDA) permit application (reference: EPR/CB3997AD/A001).

Each table details the interest features of the site and whether likely significant effect (LSE) can be ruled out for the applied for permits. A brief explanation of the LSE conclusion has also been included. Any features where LSE could not be ruled out have been taken through to the Habitats Regulations Assessment (HRA) or Site of Special Scientific Interest (SSSI) assessment for the applicable permit.

Sites potentially at risk fall into the following three categories and this document is organised accordingly to reflect that:

- zone of influence (ZOI) and direct connectivity
- potential functional linkage
- continental sites

2. ZOI and direct connectivity

2.1. Alde, Ore & Butley Estuaries SAC (UK0030076)

[Natural England Conservation Advice for Marine Protected Areas, Alde, Ore and Butley Estuaries SAC](#)

Interest feature	Can likely significant effects be ruled out?
Atlantic salt meadows	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE cannot be ruled out for loss of operational power (LOOP) event as not assessed in application.</p> <p>LSE ruled out for nutrient enrichment and toxic contamination as deposition/emissions are below the significance threshold. LSE is ruled out for acidification as the feature is not sensitive.</p> <p>WDA</p> <p>LSE cannot be ruled out. There is a potential source receptor pathway from the marine discharges from SZC therefore the site and features are screened into the appropriate assessment for detailed bespoke modelling to consider connectivity.</p>
Mudflats and sandflats not covered by seawater at low	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p>

Interest feature Can likely significant effects be ruled out?

<p>tide: intertidal coarse sediment: intertidal mixed sediment: intertidal mud: intertidal sand and muddy sand</p>	<p>LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled in terms of and toxic contamination as emissions are below the significance thresholds. LSE is ruled out for nutrient enrichment and acidification as the feature is not sensitive.</p> <p>WDA</p> <p>LSE cannot be ruled out. There is a potential source receptor pathway from the marine discharges from SZC therefore the site and features are screened into the appropriate assessment for detailed bespoke modelling to consider connectivity.</p>
<p>Estuaries: Atlantic salt meadows: intertidal coarse sediment: intertidal mixed sediments: intertidal mud: Intertidal sand and muddy sand: Subtidal mud: Subtidal mixed sediments</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE ruled out for nutrient enrichment and toxic contamination as deposition/emissions are below the significance threshold. LSE is ruled out for acidification as the feature is not sensitive.</p> <p>WDA</p> <p>LSE cannot be ruled out. There is a potential source receptor pathway from the marine discharges from SZC therefore the site and features are screened into the appropriate assessment for detailed bespoke modelling to consider connectivity.</p>

2.2. Alde-Ore Estuary SPA (UK9009112)

[Natural England Conservation Advice for Marine Protected Areas Alde-Ore Estuary SPA](#)

Interest feature	Can likely significant effects be ruled out?
Redshank	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled in terms of and toxic contamination as emissions are below the significance thresholds. LSE is ruled out for nutrient enrichment and acidification as the feature is not sensitive.</p> <p>WDA</p> <p>LSE cannot be excluded. Potential for discharges from WDA to interact with estuarine coastal habitats detailed bespoke modelling will ascertain if discharges could reach the site.</p> <p>LSE is ruled out for lowland wet grassland habitat as there is no connectivity with the marine discharges.</p>
Avocet	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE cannot be ruled out for LOOP event as not assessed in application.</p>

Interest feature	Can likely significant effects be ruled out?
	<p>LSE is ruled in terms of and toxic contamination as emissions are below the significance thresholds. LSE is ruled out for nutrient enrichment and acidification as the feature is not sensitive.</p> <p>WDA</p> <p>LSE cannot be ruled out. Potential discharges from WDA to interact estuarine coastal habitats detailed bespoke modelling will ascertain if discharges can reach the site.</p> <p>LSE is ruled out for lowland wet grassland habitat as there is no connectivity with the marine discharges.</p>
<p>Lesser black-backed gull</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled in terms of and toxic contamination as emissions are below the significance thresholds. LSE is ruled out for nutrient enrichment and acidification as the feature is not sensitive.</p> <p>WDA</p> <p>LSE cannot be ruled out. Potential for discharges from the WDA to interact with estuarine coastal habitats plus the feature will forage offshore in marine environment, this will be assessed by detailed bespoke assessment in the appropriate assessment.</p>

Interest feature

Can likely significant effects be ruled out?

<p>Marsh harrier</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE is ruled out in terms of nutrient enrichment and toxic contamination as deposition/emissions are below significance thresholds. LSE is ruled out for acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application. LSE ruled out for disturbance from noise, as noise levels are below ambient.</p> <p>WDA</p> <p>Potential for discharges to interact with estuarine coastal habitats, this will be determined by detailed bespoke modelling.</p>
<p>Little tern</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE is ruled out from CA in terms of nutrient enrichment and toxic contamination as deposition/emissions are below significance thresholds. LSE is ruled out for acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application. LSE ruled out for disturbance from noise, as noise levels are below ambient.</p>

Interest feature

Can likely significant effects be ruled out?

	<p>WDA</p> <p>Potential for discharges to interact with estuarine coastal habitats. Plus, the feature will forage offshore in marine environment, connectivity will be ascertained through detailed bespoke modelling.</p>
<p>Ruff</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE is ruled out in terms of toxic contamination as emissions are below significance thresholds. LSE is ruled out for nutrient enrichment and acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application. LSE ruled out for disturbance from noise, as noise levels are below ambient.</p> <p>WDA</p> <p>Potential to interact with estuarine coastal habitats, connectivity will be ascertained through detailed bespoke modelling.</p>
<p>Sandwich tern</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p>

Interest feature	Can likely significant effects be ruled out?
	<p>CA</p> <p>LSE is ruled out in terms of nutrient enrichment and toxic contamination as deposition/emissions are below significance thresholds. LSE is ruled out for acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application. LSE ruled out for disturbance from noise, as noise levels are below ambient.</p> <p>WDA</p> <p>Potential to interact with estuarine coastal habitats, connectivity will be ascertained through detailed bespoke modelling.</p>

2.3. Alde-Ore Estuary Ramsar (UK11002)

[Natural England Conservation Advice for Marine Protected Areas, Alde, Ore and Butley Estuaries SAC](#)

[Natural England Conservation Advice for Marine Protected Areas Alde-Ore Estuary SPA](#)

Interest feature	Can likely significant effects be ruled out?
Wetland invertebrate assemblage	<p>RSA</p> <p>LSE ruled out alone and in-combination as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE ruled out for nutrient enrichment and toxic contamination as deposition/emissions are below the significance threshold. LSE is ruled out for acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>WDA</p> <p>Potential to reach the site so will be assessed in appropriate assessment by detailed bespoke modelling.</p>
Wetland plant assemblage	<p>RSA</p> <p>LSE ruled out alone and in-combination as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE ruled out for nutrient enrichment and toxic contamination as deposition/emissions are below the significance threshold. LSE is ruled out for acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>WDA</p> <p>Potential to reach the site so will be assessed in appropriate assessment by detailed bespoke modelling.</p>

Interest feature	Can likely significant effects be ruled out?
Avocet	<p>RSA</p> <p>LSE ruled out alone and in-combination as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE ruled out for nutrient enrichment and toxic contamination as deposition/emissions are below the significance threshold. LSE is ruled out for acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>WDA</p> <p>Potential to reach the site so will be assessed in appropriate assessment by detailed bespoke modelling.</p>
Lesser black-backed gull	<p>RSA</p> <p>LSE ruled out alone and in-combination as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE ruled out for nutrient enrichment and toxic contamination as deposition/emissions are below the significance threshold. LSE is ruled out for acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>WDA</p> <p>Potential to reach the site so will be assessed in appropriate assessment by detailed bespoke modelling.</p>
Redshank	<p>RSA</p> <p>LSE ruled out alone and in-combination as radiological emissions are below the significance threshold.</p>

Interest feature	Can likely significant effects be ruled out?
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	<p>CA</p> <p>LSE is ruled out in terms of nutrient enrichment and toxic contamination as deposition/emissions are below the significance thresholds. LSE is ruled out for acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>WDA</p> <p>Potential to reach the site so will be assessed in appropriate assessment by detailed bespoke modelling.</p>
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<p>Wetland bird assemblage – breeding</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA:</p> <p>LSE ruled out for nutrient enrichment and toxic contamination as deposition/emissions are below the significance threshold. LSE is ruled out for acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>WDA</p> <p>Potential to reach the site so will be assessed in appropriate assessment by detailed bespoke modelling.</p>
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Interest feature

Can likely significant effects be ruled out?

Waterbird assemblage – wintering

RSA

LSE ruled out as radiological emissions are below the significance threshold.

CA

LSE ruled out for nutrient enrichment and toxic contamination as deposition/emissions are below the significance threshold. LSE is ruled out for acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application.

WDA

Potential to reach the site so will be assessed in appropriate assessment by detailed bespoke modelling.

2.4. Benacre to Easton Bavents SPA (UK9009291)

[European Site Conservation Objectives for Benacre to Easton Bavents SPA](#)

Interest feature	Can likely significant effects be ruled out?
Bittern	<p>RSA and CA</p> <p>Not relevant for assessment, outside of the screening distance criteria.</p> <p>WDA</p> <p>Not relevant for assessment as there is no connectivity.</p>
Marsh harrier	<p>RSA and CA</p> <p>Not relevant for assessment, outside of the screening distance criteria.</p> <p>WDA</p> <p>Not relevant for assessment as there is no connectivity.</p>
Little tern	<p>RSA and CA</p> <p>Not relevant for assessment, outside of the screening distance criteria.</p> <p>WDA</p> <p>LSE cannot be ruled out as bespoke modelling will be required to determine whether marine foraging ranges will allow the feature to come into contact with WDA discharges.</p>

2.5. Dews Pond SAC (UK0030133)

European Site Conservation Objectives for Dew's Ponds SAC

Interest feature	Can likely significant effects be ruled out?
Great crested newt	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE ruled out for nutrient enrichment, toxic contamination, and acidification of the supporting habitat.</p> <p>WDA</p> <p>Not relevant for assessment as there is no connectivity.</p>

2.6. Minsmere to Walberswick Heaths and Marshes SAC (UK0012809)

European Site Conservation Objectives for Minsmere to Walberswick Heaths & Marshes SAC

Interest feature	Can likely significant effects be ruled out?
European dry heaths	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions from CA for nutrient enrichment, acidification, and toxic contamination (NO_x).</p> <p>LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>WDA</p> <p>As this is a terrestrial feature there is no source receptor pathway for marine effects.</p>
Annual vegetation of drift lines	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p>

Interest feature	Can likely significant effects be ruled out?
	<p>LSE identified for aerial emissions from CA in terms of toxic contamination (NOx). LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE ruled out for nutrient enrichment as deposition is below the significance threshold and acidification as feature is not sensitive.</p> <p>WDA</p> <p>As this is a terrestrial feature (above mean high water) there is no source receptor pathway for marine effects.</p>
<p>Perennial vegetation of stony banks</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions in terms of nutrient enrichment, acidification, and toxic contamination (NOx). LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>WDA</p> <p>As this is a terrestrial feature (above mean high water) there is no source receptor pathway for marine effects.</p>

2.7. Minsmere-Walberswick SPA (UK9009101)

[European Site Conservation Objectives for Minsmere-Walberswick SPA](#)

Interest feature	Can likely significant effects be ruled out?
Nightjar	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment and toxic contamination (NOx) of supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled out for acidification as the feature is not sensitive and for disturbance from noise as it is below background levels.</p> <p>WDA</p> <p>No source receptor pathway for marine effects.</p>
Hen harrier	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p>

Interest feature Can likely significant effects be ruled out?

	<p>CA</p> <p>LSE identified for aerial emissions for toxic contamination (NOx) of supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE ruled out for nutrient enrichment and acidification as feature is not sensitive and for disturbance from noise as it is below background levels.</p> <p>WDA</p> <p>LSE cannot be ruled out due to potential pathway for marine discharges through the Minsmere Sluice.</p>
Teal	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for toxic contamination (NOx) of supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE ruled out for nutrient enrichment and acidification as feature is not sensitive and for disturbance from noise as it is below background levels.</p> <p>WDA</p> <p>LSE cannot be ruled out due to potential pathway for marine discharges through the Minsmere Sluice.</p>

Interest feature	Can likely significant effects be ruled out?
Greater white-fronted goose	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for toxic contamination (NOx) of supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE ruled out for nutrient enrichment and acidification as feature is not sensitive and for disturbance from noise as it is below background levels.</p> <p>WDA</p> <p>LSE cannot be ruled out due to potential pathway for marine discharges through the Minsmere Sluice.</p>
Avocet	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment and toxic contamination (NOx) of supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p>

Interest feature Can likely significant effects be ruled out?

	<p>LSE is ruled out for acidification as the feature is not sensitive and for disturbance from noise as it is below background levels.</p> <p>WDA</p> <p>LSE cannot be ruled out due to potential pathway for marine discharges through the Minsmere Sluice.</p>
<p>Bittern</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment and toxic contamination (NOx) of the supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled out for acidification as the feature is not sensitive and for disturbance from noise as it is below background levels.</p> <p>WDA</p> <p>LSE cannot be ruled out due to potential pathway for marine discharges through the Minsmere Sluice.</p>
<p>Marsh harrier</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p>

Interest feature	Can likely significant effects be ruled out?
	<p>LSE identified for aerial emissions for nutrient enrichment and toxic contamination (NOx) of the supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled out for acidification as the feature is not sensitive and for disturbance from noise as it is below background levels.</p> <p>WDA</p> <p>LSE cannot be ruled out due to potential pathway for marine discharges through the Minsmere Sluice.</p>
Shoveler	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment and toxic contamination (NOx) of the supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled out for acidification as the feature is not sensitive and for disturbance from noise as it is below background levels.</p> <p>WDA</p> <p>LSE cannot be ruled out due to potential pathway for marine discharges through the Minsmere Sluice.</p>

Interest feature Can likely significant effects be ruled out?

<p>Gadwall</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment and toxic contamination (NOx) of the supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled out for acidification as the feature is not sensitive and for disturbance from noise as it is below background levels.</p> <p>WDA</p> <p>LSE cannot be ruled out due to potential pathway for marine discharges through the Minsmere Sluice.</p>
<p>Little tern</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment and toxic contamination (NOx) of the supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled out for acidification as the feature is not sensitive and for disturbance from noise as it is below background levels.</p>

Interest feature Can likely significant effects be ruled out?

WDA

Discharge may indirectly affect the availability of fish, as a prey species, within the feeding areas of the feature as the fish may avoid areas of thermal increase. Likewise, the chemical plume may create areas of avoidance for prey species. Potential for direct effects on birds themselves from thermal and chemical plumes and areas of nutrient enrichment.

Any effect from the impingement and entrainment of prey species is outside the vires of WDA permit and will be considered in the development consent order (DCO).

2.8. Minsmere-Walberswick Ramsar (UK11044)

[European Site Conservation Objectives for Minsmere to Walberswick Heaths & Marshes SAC](#)

[European Site Conservation Objectives for Minsmere-Walberswick SPA](#)

Interest feature	Can likely significant effects be ruled out?
<p>Mosaic of marine, freshwater, marshland, and associated habitats</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment, acidification, and toxic contamination (NOx). LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>WDA</p> <p>LSE cannot be ruled out due to potential pathway for marine discharges through the Minsmere Sluice.</p>
<p>Wetland invertebrate assemblage</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment, acidification, and toxic contamination (NOx). LSE cannot be ruled out for LOOP event as not assessed in application.</p>

Interest feature Can likely significant effects be ruled out?

	<p>WDA</p> <p>LSE cannot be ruled out due to potential pathway for marine discharges through the Minsmere Sluice</p>
<p>Wetland plant assemblage</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment, acidification, and toxic contamination (NOx). LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>WDA</p> <p>LSE cannot be ruled out due to potential pathway for marine discharges through the Minsmere Sluice.</p>
<p>Wetland bird assemblage (breeding)</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment and toxic contamination (NOx) of the supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled out for acidification as the feature is not sensitive and for disturbance from noise as it is below background levels.</p>

Interest feature	Can likely significant effects be ruled out?
	<p data-bbox="443 296 524 328">WDA</p> <p data-bbox="443 368 1883 400">LSE cannot be ruled out due to potential pathway for marine discharges through the Minsmere Sluice.</p>

2.9. Orfordness to Shingle Street SAC (UK0014780)

[Natural England Conservation Advice for Marine Protected Areas Orfordness - Shingle Street SAC](#)

Interest feature	Can likely significant effects be ruled out?
<p>Perennial vegetation of stony banks</p>	<p>RSA</p> <p>LSE ruled out alone and in-combination as radiological emissions are below the significance threshold.</p> <p>CA:</p> <p>LSE is ruled out in terms of nutrient enrichment and toxic contamination. LSE is ruled out for acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>WDA</p> <p>No source receptor pathway for the marine environment as above mean high water.</p>
<p>Perennial vegetation of drift lines</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE is ruled out in terms of toxic contamination. LSE is ruled out for nutrient enrichment and acidification as the feature is not sensitive. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>WDA</p> <p>No source receptor pathway for the marine environment as above mean high water.</p>

Interest feature	Can likely significant effects be ruled out?
Coastal lagoons	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>The coastal lagoons are located at >10km from SZC and are therefore not relevant for assessment.</p> <p>WDA</p> <p>The coastal lagoons at this site are not a marine feature as they occur landward of highest astronomical tide. However, the salinity of the lagoons is maintained by percolation through the shingle, while at high tides sea water can overtop the shingle bank. The impact of marine discharges upon this feature will therefore be considered within the appropriate assessment.</p>

2.10. Outer Thames Estuary SPA (UK9020309)

[Natural England and JNCC Conservation Advice for Marine Protected Areas Outer Thames Estuary SPA](#)

Interest feature	Can likely significant effects be ruled out?
Little tern	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment and toxic contamination (NOx) of the supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled out for acidification as the feature is not sensitive and for disturbance from noise as it is below background levels.</p> <p>WDA</p> <p>LSE cannot be ruled out. Discharge from the WDA is directly into the SPA and may indirectly affect the availability of fish as a prey species within the feeding areas of the features as the fish may avoid areas of thermal increase. Likewise, the chemical plume may create areas of avoidance for prey species. Potential for direct effects on birds themselves from thermal and chemical plumes.</p> <p>Potential effect from the impingement and entrainment of prey species, but this is outside of the remit of the WDA permit and will be considered in the DCO.</p>

Interest feature

Can likely significant effects be ruled out?

<p>Common tern</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment and toxic contamination (NOx) of the supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled out for acidification as the feature is not sensitive and for disturbance from noise as it is below background levels.</p> <p>WDA</p> <p>LSE cannot be ruled out. Discharge from the WDA is directly into the SPA and may indirectly affect the availability of fish as a prey species within the feeding areas of the features as the fish may avoid areas of thermal increase. Likewise, the chemical plume may create areas of avoidance for prey species. Potential for direct effects on birds themselves from thermal and chemical plumes.</p> <p>Potential effect from the impingement and entrainment of prey species but this is outside of the remit of the WDA permit and will be considered in the DCO.</p>
<p>Red throated diver</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p>

Interest feature	Can likely significant effects be ruled out?
	<p>CA</p> <p>LSE identified for aerial emissions for nutrient enrichment and toxic contamination (NOx) of the supporting habitat. LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE is ruled out for acidification as the feature is not sensitive and for disturbance from noise as it is below background levels.</p> <p>WDA</p> <p>LSE cannot be ruled out. Discharge is directly into the SPA and may indirectly affect the availability of fish as a prey species within the feeding areas of the features as the fish may avoid areas of thermal increase. Likewise, the chemical plume may create areas of avoidance for prey species. Potential for direct effects on birds themselves from thermal and chemical plumes.</p> <p>Potential effect from the impingement and entrainment of prey species but this is outside vires of WDA permit and will be considered in the DCO.</p>

2.11. Sandlings Forest SPA (UK9020286)

[European Site Conservation Objectives for Sandlings SPA \(UK9020286\)](#)

Interest feature	Can likely significant effects be ruled out?
Woodlark	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE cannot be ruled out for LOOP event as not assessed in application.</p> <p>LSE ruled out for nutrient enrichment and toxic contamination as deposition/emissions are below the significance threshold, and acidification as feature is not sensitive. LSE ruled out for disturbance from noise, as noise levels are below ambient.</p> <p>WDA</p> <p>Not relevant for assessment as there is no connectivity.</p>
Nightjar	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>LSE cannot be ruled out for LOOP event as not assessed in application.</p>

Interest feature	Can likely significant effects be ruled out?
	<p>LSE ruled out for nutrient enrichment and toxic contamination as deposition/emissions are below the significance threshold, and acidification as feature is not sensitive. LSE ruled out for disturbance from noise, as noise levels are below ambient.</p> <p>WDA</p> <p>Not relevant for assessment as there is no connectivity.</p>

2.12. Southern North Sea SAC (UK0030395)

[Special Area of Conservation: Southern North Sea Conservation Objectives and Advice on Operations. March 2019](#)

Interest feature	Can likely significant effects be ruled out?
Harbour porpoise	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>The feature isn't considered sensitive to air quality effects.</p> <p>WDA</p> <p>The discharges are directly into the site and may cause the local displacement of marine mammals and small-scale behavioural effects in local fish communities, therefore impacting the availability of prey species for harbour porpoise. Effects will be considered by detailed bespoke modelling.</p>

3. Potential functional linkage

3.1. Coquet Island SPA (UK9006031)

[European Site Conservation Objectives for Coquet Island SPA](#)

Note: site was considered at LSE stage due to being designated for seabirds.

Interest feature	Can likely significant effects be ruled out?
Fulmar (assemblage)	WDA Although SZC is within the foraging range for this feature, it is considered that there is no functional linkage, and the area does not provide an important role in maintaining or restoring this feature.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

3.2. Flamborough and Filey Coast SPA (UK9006101)

[European Site Conservation Objectives for Flamborough and Filey Coast SPA](#)

Note: site was considered at LSE stage due to being designated for seabirds.

Interest feature	Can likely significant effects be ruled out?
Gannet	<p>WDA</p> <p>Although SZC is within the foraging range for this feature, it is considered that there is no functional linkage, and the area does not provide an important role in maintaining or restoring this feature.</p>
Fulmar (assemblage)	<p>WDA</p> <p>Although SZC is within the foraging range for this feature, it is considered that there is no functional linkage, and the area does not provide an important role in maintaining or restoring this feature.</p>
Kittiwake	<p>WDA</p> <p>Although SZC is within the foraging range for this feature, it is considered that there is no functional linkage, and the area does not provide an important role in maintaining or restoring this feature.</p>
Puffin (assemblage)	<p>WDA</p> <p>Although SZC is within the foraging range for this feature, it is considered that there is no functional linkage, and the area does not provide an important role in maintaining or restoring this feature.</p>
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

3.3. Humber Estuary SAC (UKUK0030170)

[European Site Conservation Objectives for Humber Estuary SAC](#)

Interest feature	Can likely significant effects be ruled out?
Grey seal	WDA LSE ruled out alone and in-combination for WDA given the small proportion of potential foraging area being affected, the significant distance between SZC and the haul out sites and the fact that the area around SZC is not heavily used by seals.
Sea lamprey	WDA Over 9 years of impingement monitoring at SZB, only one sea lamprey has been recorded. This suggests that the species is not common in the area, and that the area is of no particular importance to the North Sea population.
River lamprey	WDA River lamprey are impinged at SZB which shows they are in the area. However, should localised displacement occur due to WDA discharges, it is unlikely to adversely affect the number of individual river lampreys migrating into or through SACs.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

3.4. Humber Estuary Ramsar

[Information Sheet on Ramsar Wetlands: Humber Estuary Ramsar](#)

Interest feature	Can likely significant effects be ruled out?
Grey seal	WDA LSE ruled out alone and in-combination for WDA given the small proportion of potential foraging area being affected, the significant distance between SZC and the haul out sites and the fact that the area around SZC is not heavily used by grey seals.
Sea lamprey	WDA Over 9 years of impingement monitoring at SZB, only one sea lamprey has been recorded. This suggests that the species is not common in the area, and that the area is of no particular importance to the North Sea population.
River lamprey	WDA River lamprey are impinged at SZB which shows they are in the area. However, should localised displacement occur due to WDA discharges, it is unlikely to adversely affect the number of individual river lampreys migrating into or through SACs.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

3.5. Minsmere-Walberswick Heaths and Marshes SSSI

[Natural England Site Information for Minsmere-Walberswick Heaths and Marshes SSSI](#)

Note: The SSSI is functionally linked land for bird species designated for Minsmere-Walberswick SPA and Ramsar and Alde Ore SPA and Ramsar.

Interest feature	Can likely significant effects be ruled out?
<p>Aggregations of breeding birds: avocet, bearded tit, bittern, Cetti's warbler, garganey, marsh harrier</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>There is potential for aerial emissions to affect supporting habitat from nutrient enrichment, acidification, and toxic contamination.</p>
<p>S4 - Phragmites australis swamp and reed-beds as representative supporting habitat</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>There is potential for aerial emissions to affect supporting habitat from nutrient enrichment, acidification, and toxic contamination.</p>

3.6. Plymouth Sound and Estuaries SAC (UK0013111)

European Site Conservation Objectives for Plymouth Sound & Estuaries SAC

Interest feature	Can likely significant effects be ruled out?
Allis shad	WDA Given the scale of marine migrations undertaken by allis shad, any avoidance behaviour resulting from thermal or chemical plumes discharged by SZC will be so small that there will be no material effect on allis shad migratory pathways.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

3.7. Sizewell Marshes SSSI

[Natural England Site Information for Sizewell Marshes SSSI](#)

Note: The SSSI is functionally linked land for bird species designated for Minsmere-Walberswick SPA and Ramsar and Alde Ore SPA and Ramsar

Interest feature	Can likely significant effects be ruled out?
<p>Assemblages of breeding birds (lowland damp grasslands)</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>There is potential for aerial emissions to affect supporting habitat from nutrient enrichment, acidification, and toxic contamination.</p>
<p>S26 - Phragmites australis - Urtica dioica tall-herb fen as representative supporting habitat</p>	<p>RSA</p> <p>LSE ruled out as radiological emissions are below the significance threshold.</p> <p>CA</p> <p>There is potential for aerial emissions to affect supporting habitat from nutrient enrichment, acidification, and toxic contamination.</p>

3.8. The Wash and North Norfolk Coast SAC (UK0017075)

[European Site Conservation Objectives for The Wash & North Norfolk Coast SAC](#)

Interest feature	Can likely significant effects be ruled out alone or in combination?
Harbour seal	WDA There is potential for thermal or chemical plumes to disrupt the coastal movement of seals between The Wash and North Norfolk Coast SAC and the potentially functionally linked Thames Estuary.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

4. Continental sites

4.1. Elbe zwischen Geesthacht und Hamburg SCI (DE2526332)

<https://eunis.eea.europa.eu/sites/DE2526332>

Interest feature	Can likely significant effects be ruled out?
Twaite shad	WDA Shad are impinged at SZB which shows they are in the area. Any avoidance behaviour resulting from thermal or chemical plumes discharged by SZC will be so small compared to the at-sea movements of this species around the North Sea, that there will be no material effect on twaite shad migratory pathways.
River lamprey	WDA River lamprey are impinged at SZB which shows they are in the area. However, should localised displacement occur due to WDA discharges, it is unlikely to adversely affect the number of individual river lampreys migrating into or through SACs.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

4.2. Hamburger Unterelbe SCI (DE2526305)

<https://eunis.eea.europa.eu/sites/DE2526305>

Interest feature	Can likely significant effects be ruled out?
Twaite shad	WDA Shad are impinged at SZB which shows they are in the area. Any avoidance behaviour resulting from thermal or chemical plumes discharged by SZC will be so small compared to the at-sea movements of this species around the North Sea, that there will be no material effect on twaite shad migratory pathways.
River lamprey	WDA River lamprey are impinged at SZB which shows they are in the area. However, should localised displacement occur due to WDA discharges, it is unlikely to adversely affect the number of individual river lampreys migrating into or through SACs.
Sea lamprey	WDA Over 9 years of impingement monitoring at SZB, only one sea lamprey has been recorded. This suggests that the species is not common in the area, and that the area is of no particular importance to the North Sea population.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

4.3. Mühlenberger Loch/Neßsand SCI (DE2424302)

<https://eunis.eea.europa.eu/sites/DE2424302>

Interest feature	Can likely significant effects be ruled out?
Twaite shad	WDA Shad are impinged at SZB which shows they are in the area. Any avoidance behaviour resulting from thermal or chemical plumes discharged by SZC will be so small compared to the at-sea movements of this species around the North Sea, that there will be no material effect on twaite shad migratory pathways.
Sea lamprey	WDA Over 9 years of impingement monitoring at SZB, only one sea lamprey has been recorded. This suggests that the species is not common in the area, and that the area is of no particular importance to the North Sea population.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

4.4. Nebenarme der Weser mit Strohauser Plate und Juliusplate SCI (DE2516331)

<https://eunis.eea.europa.eu/sites/DE2516331>

Interest feature	Can likely significant effects be ruled out?
Twaite shad	WDA Shad are impinged at SZB which shows they are in the area. Any avoidance behaviour resulting from thermal or chemical plumes discharged by SZC will be so small compared to the at-sea movements of this species around the North Sea, that there will be no material effect on twaite shad migratory pathways.
River lamprey	WDA River lamprey are impinged at SZB which shows they are in the area. However, should localised displacement occur due to WDA discharges, it is unlikely to adversely affect the number of individual river lampreys migrating into or through SACs.
Sea lamprey	WDA Over 9 years of impingement monitoring at SZB, only one sea lamprey has been recorded. This suggests that the species is not common in the area, and that the area is of no particular importance to the North Sea population.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

4.5. Rapfenschutzgebiet Hamburger Stromelbe SCI (DE2424303)

<https://eunis.eea.europa.eu/sites/DE2424303>

Interest feature	Can likely significant effects be ruled out?
Twaite shad	WDA Shad are impinged at SZB which shows they are in the area. Any avoidance behaviour resulting from thermal or chemical plumes discharged by SZC will be so small compared to the at-sea movements of this species around the North Sea, that there will be no material effect on twaite shad migratory pathways.
River lamprey	WDA River lamprey are impinged at SZB which shows they are in the area. However, should localised displacement occur due to WDA discharges, it is unlikely to adversely affect the number of individual river lampreys migrating into or through SACs.
Sea lamprey	WDA Over 9 years of impingement monitoring at SZB, only one sea lamprey has been recorded. This suggests that the species is not common in the area, and that the area is of no particular importance to the North Sea population.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

4.6 Schelde-en Durmeëstuarium van de Nederlandse grens tot Gent SAC (BE2300006)

<https://eunis.eea.europa.eu/sites/BE2300006>

Interest feature	Can likely significant effects be ruled out?
Twaite shad	WDA Shad are impinged at SZB which shows they are in the area. Any avoidance behaviour resulting from thermal or chemical plumes discharged by SZC will be so small compared to the at-sea movements of this species around the North Sea, that there will be no material effect on twaite shad migratory pathways.
River lamprey	WDA River lamprey are impinged at SZB which shows they are in the area. However, should localised displacement occur due to WDA discharges, it is unlikely to adversely affect the number of individual river lampreys migrating into or through SACs.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

4.7. Schleswig-Holsteinisches Elbästuar und angrenzende Flächen SCI (DE2323392)

<https://eunis.eea.europa.eu/sites/DE2323392>

Interest feature	Can likely significant effects be ruled out?
Twaite shad	WDA Shad are impinged at SZB which shows they are in the area. Any avoidance behaviour resulting from thermal or chemical plumes discharged by SZC will be so small compared to the at-sea movements of this species around the North Sea, that there will be no material effect on twaite shad migratory pathways.
River lamprey	WDA River lamprey are impinged at SZB which shows they are in the area. However, should localised displacement occur due to WDA discharges, it is unlikely to adversely affect the number of individual river lampreys migrating into or through SACs.
Sea lamprey	WDA Over 9 years of impingement monitoring at SZB, only one sea lamprey has been recorded. This suggests that the species is not common in the area, and that the area is of no particular importance to the North Sea population.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

4.8. Untereibe SCI (DE2018331)

<https://eunis.eea.europa.eu/sites/DE2018331>

Interest feature	Can likely significant effects be ruled out?
Twaite shad	WDA Shad are impinged at SZB which shows they are in the area. Any avoidance behaviour resulting from thermal or chemical plumes discharged by SZC will be so small compared to the at-sea movements of this species around the North Sea, that there will be no material effect on twaite shad migratory pathways.
River lamprey	WDA River lamprey are impinged at SZB which shows they are in the area. However, should localised displacement occur due to WDA discharges, it is unlikely to adversely affect the number of individual river lampreys migrating into or through SACs.
Sea Lamprey	WDA Over 9 years of impingement monitoring at SZB, only one sea lamprey has been recorded. This suggests that the species is not common in the area, and that the area is of no particular importance to the North Sea population.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

4.9. Unterweser SCI (DE2316331)

<https://eunis.eea.europa.eu/sites/DE2316331>

Interest feature	Can likely significant effects be ruled out?
Twaite shad	WDA Shad are impinged at SZB which shows they are in the area. Any avoidance behaviour resulting from thermal or chemical plumes discharged by SZC will be so small compared to the at-sea movements of this species around the North Sea, that there will be no material effect on twaite shad migratory pathways.
River lamprey	WDA River lamprey are impinged at SZB which shows they are in the area. However, should localised displacement occur due to WDA discharges, it is unlikely to adversely affect the number of individual river lampreys migrating into or through SACs.
Sea lamprey	WDA Over 9 years of impingement monitoring at SZB, only one sea lamprey has been recorded. This suggests that the species is not common in the area, and that the area is of no particular importance to the North Sea population.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

4.10. Weser bei Bremerhaven SCI (DE2417370)

<https://eunis.eea.europa.eu/sites/DE2417370>

Interest feature	Can likely significant effects be ruled out?
Twaite shad	WDA Shad are impinged at SZB which shows they are in the area. Any avoidance behaviour resulting from thermal or chemical plumes discharged by SZC will be so small compared to the at-sea movements of this species around the North Sea, that there will be no material effect on twaite shad migratory pathways.
River lamprey	WDA River lamprey are impinged at SZB which shows they are in the area. However, should localised displacement occur due to WDA discharges, it is unlikely to adversely affect the number of individual river lampreys migrating into or through SACs.
Sea lamprey	WDA Over 9 years of impingement monitoring at SZB, only one sea lamprey has been recorded. This suggests that the species is not common in the area, and that the area is of no particular importance to the North Sea population.
Remaining features	All other features for this site are not relevant as it is considered there is no source receptor pathway link

List of abbreviations

Term	Meaning
CA	Combustion activity
DCO	Development consent order
EPR	Environmental permitting regulations
HRA	Habitats Regulations Assessment
LOOP	Loss of operational power
LSE	Likely significant effect
NOx	Nitrous oxides
Ramsar	Wetland site of international importance
RSA	Radioactive substances activity
SAC	Special Area of Conservation
SCI	Site of community importance
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SZB	Sizewell B
SZC	Sizewell C
WDA	Water discharges activity
ZOI	Zone of influence

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