The Sizewell C Project

6.18 Fourth Environmental Statement Addendum - Non-Technical Summary

September 2021

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

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1 INTRODUCTION

1.1 Background

NNB Generation Company (SZC) Limited (SZC Co.) submitted an application for a Development Consent Order (DCO) to the Planning Inspectorate under the Planning Act 2008 for the Sizewell C Project in May 2020 (referred to as the 'Application'). This included the submission of an **Environmental Statement (ES)**, with an accompanying Non-Technical Summary (NTS) which explained the conclusions of the ES in non-technical language. The Application was accepted for examination in June 2020.

In January 2021, SZC Co. submitted a request to change the Application with 15 changes proposed across the Sizewell C Project. The change submission was supported by the **First ES Addendum** [AS-179 to AS-260]. The 15 proposed changes were accepted for examination by the Examining Authority in April 2021.

The **First ES Addendum** also considered any 'Additional Information' submitted by SZC Co. during the pre-examination stage, comprising further material to support the Application and assist Interested Parties in their understanding of matters.

In July 2021, SZC Co. submitted a second request to change the Application with three proposed changes across the proposed development (Changes 16-18). This included the submission of a **Second ES Addendum** [REP5-062 to REP5-069]. The three further changes were accepted for examination by the Examining Authority in August 2021.

In August 2021, SZC Co. also submitted a **Third ES Addendum** [REP6-017] to present corrections to road traffic noise modelling for road links associated with the two village bypass, Sizewell link road, Yoxford roundabout and other highway improvements, and an assessment of any new or different significant effects that are likely to result from these corrections.

1.2 Purpose of this document

This document is the Non-Technical Summary of the **Fourth ES Addendum** (Doc Ref. 6.18). The purpose of the **Fourth ES Addendum** is to present an assessment of any new or different significant effects that are likely to result from:

- any Additional Information that has been submitted by SZC Co. over the course of the examination; and
- a further proposed change to the Application to provide for a temporary desalination plant at the main development site (referred to as 'Proposed Change 19').

2 ADDITIONAL INFORMATION

Volume 1, **Chapter 2** of the **Fourth ES Addendum** presents an assessment of any new or different significant effects that are likely to result from any Additional Information that has been submitted by SZC Co. over the course of the examination.

A full list of Additional Information submitted over the course of the examination to date, as relevant to each Environmental Impact Assessment (EIA) topic, is provided within **Volume 1**, **Chapter 2** of the **Fourth ES Addendum**.

2.1 Updated assessments

A review of the Additional Information has been undertaken by EIA specialists across all technical assessments within the **ES** and subsequent **ES Addenda**. The review concluded that the Additional Information does not materially change the technical assessments listed within **Plate 2.1**. Instead, the Additional Information submitted into examination for these topics provides further clarifications and / or details which validate the conclusions of these assessments.

Plate 2.1: List of technical assessments with no material changes to the conclusions as a result of the Additional Information submitted into examination

- Conventional waste and material resources;
- Socio-economics;
- Air quality;
- Landscape and visual;
- Amenity and recreation;
- Terrestrial historic environment;
- Soils and agriculture;
- Geology and land quality;
- Groundwater and surface water;
- Coastal geomorphology and hydrodynamics;
- Marine water quality and sediments;
- Marine ecology and fisheries;
- Marine historic environment;
- Marine navigation;
- Radiological considerations;
- Climate change; and
- Major Accidents and Disasters; and
- Health and Wellbeing.

The review concluded that the Additional Information submitted into the examination results in updates to the following technical assessments:

- Transport;
- Noise and vibration;
- Terrestrial ecology and ornithology; and
- Cumulative Effects.

Further information on each of these assessments is provided below.

a) Transport

In response to comments received from the Examining Authority, Suffolk County Council and East Suffolk Council, SZC Co. has updated the traffic flows and the methodology of the transport environmental assessment.

In addition, a revised package of transport mitigation has been agreed with East Suffolk Council and Suffolk County Council, which is secured via the **Deed of Obligation** (Doc Ref. 8.17(F)). The updated assessment demonstrates that with the agreed transport mitigation package in place, all significant residual effects for transport have been reduced to **not significant**, including with regards to the cumulative effects assessment.

b) Noise and vibration

As a result of the updates to traffic flows, as referenced above, new significant adverse noise effects would occur during daytime as follows:

- During the 2023 early-years peak scenario:
  - along the B1122 to the north;
  - along the B1122 through Theberton;
  - along B1122 north of Sizewell C access
- During the 2028 peak construction typical and busiest days scenarios:
  - along the B1122 to the south.

SZC Co. has committed to providing noise insulation for all residential properties fronting the B1122. Properties fronting the road links identified as likely to have new significant adverse effects will therefore benefit from the insulation provided by the **Noise Mitigation Scheme** (Doc Ref. 6.3 11H(C)).

In addition, SZC Co. has undertaken a supplemental noise assessment and consultation on rail noise. Additional significant adverse effects were identified at three properties within Whitearch Park. It is considered that the improvements in sound insulation offered by the **Noise Mitigation Scheme** (Doc Ref 6.3 11H(C)) would be implemented for these park homes to mitigate the effect.

c) Terrestrial ecology and ornithology

The Additional Information submitted into the examination with regards to terrestrial ecology and ornithology identifies a series of updated mitigation measures, which have been defined through stakeholder engagement and as part of the continued ecological monitoring of the Sizewell C Project site.

These additional mitigation measures include a new fund for landowners to provide habitat improvements for farmland birds, additional measures for protected species (including natterjack toad, barn owl, bats, otter and great crested newt), and further detail on mitigation for watercourse crossings at Sizewell link road.

Where relevant, the new measures are detailed within the updated draft Protected Species Licence applications, as submitted to Natural England, have been included within the updated **Code of Construction Practice** (Doc Ref. 8.11(D)) or the **Deed of Obligation** (Doc Ref. 8.17(F)).

With the new Sizewell C Farmland Birds Fund, included within the **Deed of Obligation** (Doc Ref. 8.17(F)), and a Dark Corridor Plan included within the updated **Lighting Management Plan** (Doc Ref. 6.3 2B (A)), a significant cumulative effect on farmland birds and a significant effect on bats, respectively, have been reduced to **not significant**.

d) Cumulative Effects

SZC Co. has undertaken a review of the cumulative effects assessment presented within **Volume 10** of the **ES** [APP-572 to APP-582], as updated by subsequent **ES Addenda** [AS-189**,** REP6-017], in light of the Additional Information submitted into the examination.

The agreed package of transport mitigation included within the **Deed of Obligation** (Doc Ref. 8.17(F)) is considered to reduce all significant cumulative effects previously identified within the **Volume 10, Chapter 4** of the **ES** [APP-578] and the subsequent **ES Addenda** [AS-189] to **not significant**.

Due to the updates to the noise assessment, as discussed in the previous section, a high potential for a significant inter-relationship effect along the B1122 has been identified. This is because of the potential for a combination of noise, air quality and visual effects from the Sizewell C Project to result in an increased sense of disturbance at the properties along this road.

The Sizewell C Farmland Birds Fund referenced under the terrestrial ecology and ornithology assessment above is considered to reduce the significant cumulative effect on farmland birds to **not significant**.

There are no other updates to the cumulative effects assessment, as a result of the Additional Information submitted into examination.

SZC Co. has also undertaken a full update of the cumulative schemes list to review any new cumulative developments which have come forward since the submission of the DCO Application in May 2020. The review of the updated list concluded that there would be no change to conclusions of the cumulative effects assessment presented within **Volume 10**, **Chapter 5** of the **ES** [APP-578], as updated by the subsequent **ES Addenda** [AS-189].

3 PROPOSED CHANGE 19: TEMPORARY DESALINATION PLANT

Volume 1, Chapter 3 of the **Fourth ES Addendum** provides a description of the temporary desalination plant and an assessment of whether the Proposed Change 19 introduces new or materially different likely significant effects from those set out in the **ES** and subsequent **ES Addenda**.

3.1 Description of the Temporary Desalination Plant

a) Why is this change required?

SZC Co. continues to engage closely with Essex and Suffolk Water on delivery of the Sizewell transfer main (refer to the updated **Water Supply Strategy** (Doc Ref.8.4K(A)) for further information). However, the unavailability of this main for at least the first two years of construction, and potentially longer, requires a temporary additional water supply to be secured, in order to meet the Sizewell C Project's predicted water demand. The proposed change to the Application is therefore for a temporary construction-phase desalination plant which is required before the Sizewell transfer main is fully available.

b) Description of the proposed change

The desalination process comprises the following core components:

- Onshore desalination and associated equipment.
- Seawater intake pipe and associated headworks.
- Brine water outfall pipe and associated diffusers.

The assumed technology for the proposed plant is Sea Water Reverse Osmosis (SWRO) desalination. The plant would consist of up to approximately nine containerised plant modules with associated chlorination units, equipment and other tanks and is assumed to operate up to 24 hours per day.

The modular desalination plant would initially be capable of producing up to approximately 2,600m^3 of potable water per day. In the event that the water transfer main is not complete by the 4th year of construction, an additional module would be added to the plant to create the ability to produce up to approximately 4,000m^3 of potable water per day.

The plant would initially be located in the main platform area, as shown on **Figure 3.1**. Once construction activity in the main platform area reaches a point where the desalination plant becomes a physical constraint (approximately Year 4 of construction), it would be relocated to the temporary

construction area, as shown on **Figure 3.2**, if the Sizewell transfer main is not already delivered by that time. The relocation of the desalination plant to the temporary construction area would be phased to coincide with a period of relatively low potable water demand. In order to maintain continuity of supply, the desalination plant would be installed and commissioned at the relocation site before the existing plant on the main platform is fully decommissioned.

Prior to the installation of the construction site's permanent electricity connection, the plant would be powered by temporary on-site diesel generators.

The non-hazardous by-product of the desalination process would be dried on site and would require off-site disposal. At peak desalination, approximately one HGV-load of this material would be generated and exported per day.

Construction of the desalination plant would take approximately 4-6 months and can only commence once the main platform is suitably prepared. It is therefore assumed that for the first 9-12 months of construction, potable water will need to be imported by road via water tanker truck.

Plant would be delivered by road and is unlikely to comprise any Abnormal Indivisible Loads (AILs). The additional Heavy Goods Vehicles (HGV) movements would be within the already proposed HGV daily limit established for the Sizewell C Project during the early years, and therefore, there would be no increase in transport effects.

The seawater intake and outfall pipes would be installed under the beach and seabed using a directional drilling or other trenchless methodology that would launch from the landward side of the both the temporary Hard Coastal Defence Feature and the haul road.

Figure 3.1: Initial location of the temporary desalination plant on the main platform

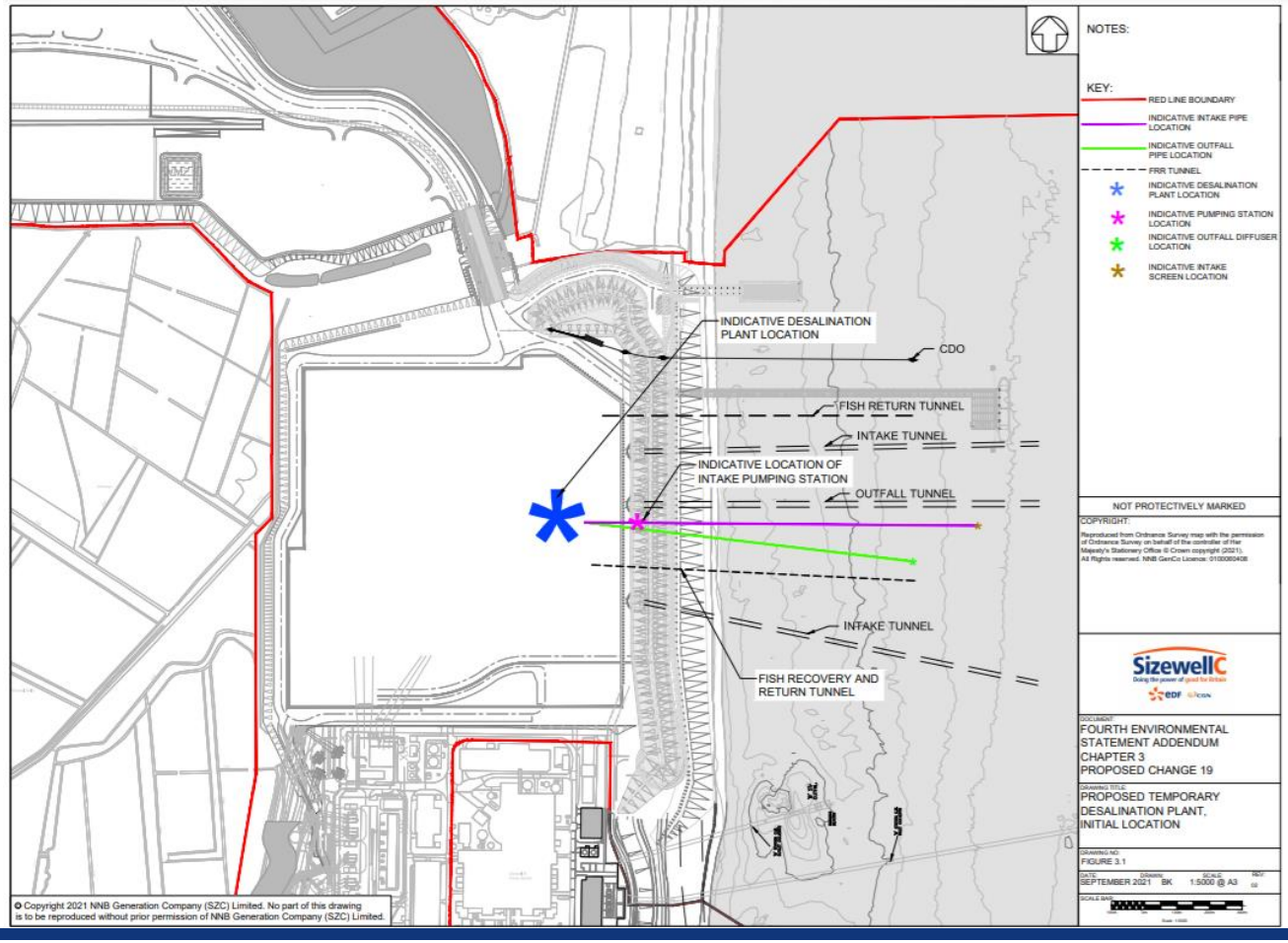
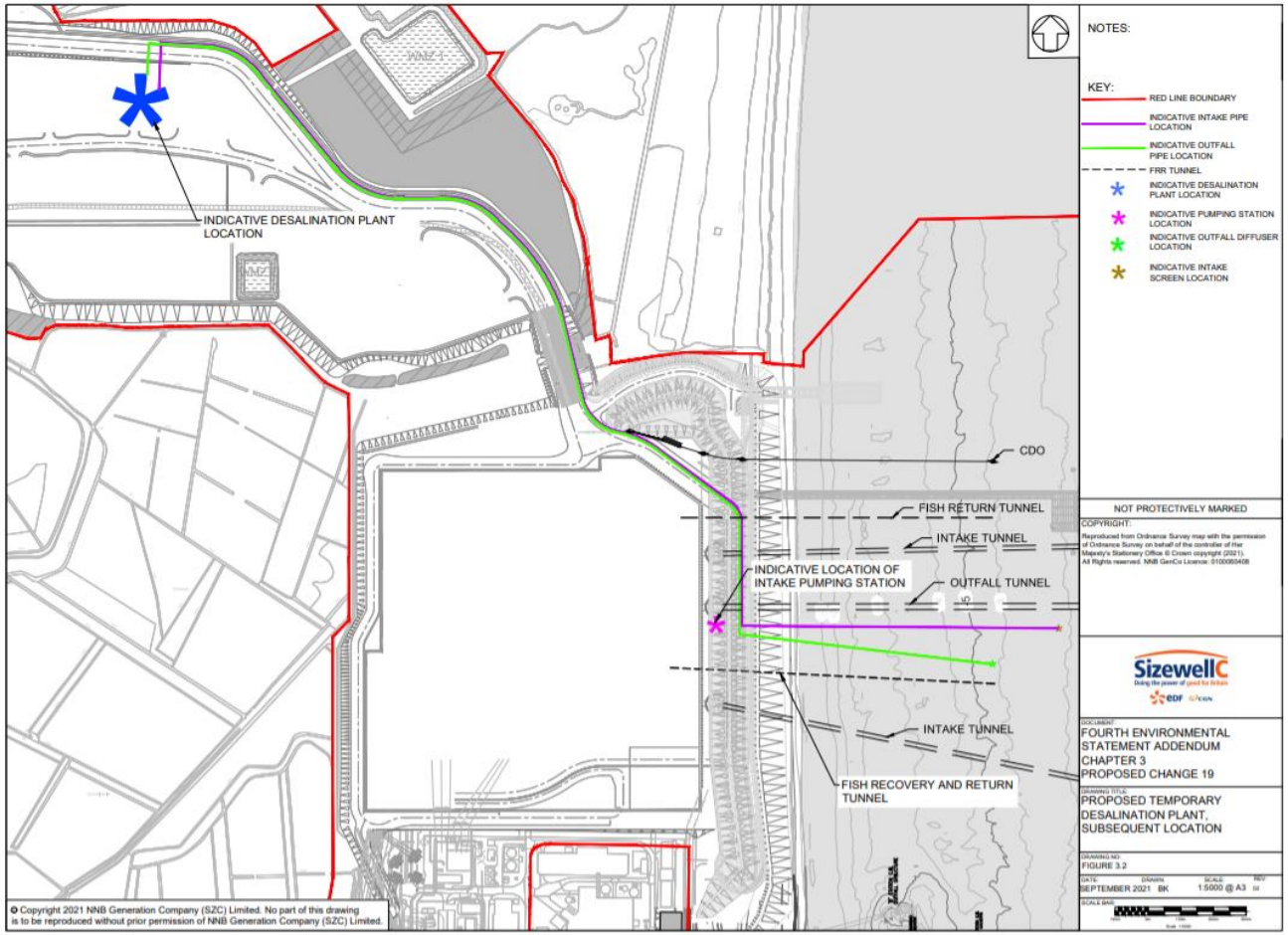


Figure 3.2: Subsequent location of the temporary desalination plant on the temporary construction area



3.2 Updated assessments

A review of the likely environmental effects from the temporary desalination plant has been undertaken by EIA specialists across all technical assessments presented in the ES. It was concluded that the assessments listed within **Plate 3.1** did not need to be updated as a result of the Proposed Change 19. This was because the temporary desalination plant would not change the conclusion of their technical assessments reported within the **ES**, as updated by the subsequent **ES Addenda**.

The review further concluded that the Proposed Change 19 could have the potential to affect the following assessments : :

- Conventional Waste and Material Resources;
- Noise and Vibration;
- Air Quality;
- Coastal Geomorphology and Hydrodynamics;
- Marine Water Quality and Sediments;
- Marine Ecology and Fisheries;
- Marine Historic Environment;
- Marine Navigation;
- Major Accidents and Disasters; and
- Cumulative effects.

Plate 3.1: List of technical topics screened out of further assessment

- Socio-economics;
- Landscape and Visual;
- Terrestrial Ecology and Ornithology;
- Amenity and Recreation;
- Terrestrial Historic Environment
- Soils and agriculture;
- Geology and land quality;
- Groundwater and surface water;
- Radiological considerations;
- Climate change;
- Health and wellbeing.

Volume 1, Chapter 3 of the **Fourth ES Addendum** provides the further assessment and a summary is provided in sections below.

On the basis of the updated assessments, **Volume 1**, **Chapter 3** of the **Fourth ES Addendum** concluded that the Proposed Change 19 does not change the conclusions of the **ES**, as updated by the subsequent **ES Addenda**. The temporary desalination plant would not introduce any new or materially different likely significant effects.

a) Conventional Waste and Material Resources

The operation of the desalination plant is estimated to generate approximately 14 tonnes of dewatered sludge cake per day, 20m^3 of Clean In Place (CIP) wastewater every 3 months and very limited amounts of other wastes which would require disposal off-site. A review of the predicted waste quantities against the availability of waste management infrastructure within 100km of the main development site boundary concluded that there is sufficient capacity for existing infrastructure to accept this waste. Therefore, **no significant effects** have been identified.

In conclusion, the temporary desalination plant does not result in new or materially different likely significant effects to those identified with the **Volume 2, Chapter 8** of the **ES** [APP-193] and the subsequent **ES Addenda** [AS-181] for the conventional waste and material resources assessment.

b) Noise and Vibration

During the construction of the temporary desalination plant, additional noise would be generated from directional drilling, use of cranes and plant. During operation, additional noise would be generated by the diesel generator plant, when in use, and pumps.

The noise and vibration assessment concluded that the provision of the temporary desalination plant would not change the overall daytime noise levels from the construction site, however there would be slight changes in the night-time noise levels. However, these changes would not be sufficient to alter the magnitude of impacts at identified receptor locations.

The construction and operation of the temporary desalination plant would not alter the findings of the assessment set out in **Volume 2, Chapter 11** of the **ES** [APP-202], irrespective of whether it is located in its initial position, or at its proposed location within the temporary construction area.

c) Air Quality

There is no change anticipated in overall traffic emissions or construction dust emissions associated with the desalination plant.

The operation of the desalination plant would require the use of temporary diesel generators of circa 1.6 MW output until the construction site's permanent electricity connection is installed and operational.

The diesel generators would be operated in accordance with and Environmental Permit and mitigation detailed in **Volume 2**, **Chapter 12** of the **ES** [APP-212] would also apply. As a result, the temporary desalination plant would not result in a change to the assessment of effects from construction air quality impacts, and no additional mitigation is considered to

be required. The conclusion of **Volume 2**, **Chapter 12** of the **ES** [APP-212] with respect to air quality effects therefore remain unchanged.

d) Coastal Geomorphology and Hydrodynamics

The coastal geomorphology and hydrodynamics assessment of the temporary desalination plant considered likely effects from dredging, dredge spoil disposal, drilling for connection to headworks, construction platform operations within the marine environment and the physical presence of intake and outfall heads. The following pressures from these activities were assessed:

- change in tidal flow;
- changes to wave propagation shoreward;
- changes in suspended sediments;
- sedimentation rate changes; and
- sediment bed change.

However, with the use of horizontal direct drilling, such that the intake and outfall heads are the only features in the marine environment, and appropriate siting of the heads beyond the main areas of longshore sediment transport, **no significant effects** were identified, due to the limited extent of works required.

In conclusion, the temporary desalination plant does not result in new or materially different likely significant effects compared to those identified within **Volume 2, Chapter 20** of the **ES** [APP-311] and the subsequent **ES Addenda** [AS-181] for the coastal geomorphology and hydrodynamics assessment.

e) Marine Water Quality and Sediments

The marine water quality and sediments assessment of the temporary desalination plant considered likely effects from dredging and discharges into the marine environment. The following pressures from these activities were assessed:

- changes in suspended sediment concentration from dredging;
- changes in salinity; and
- pollution from other chemical changes (including heavy metal contamination and nutrient enrichment).

In addition to the measures described within **section 3.2d)**, angled chlorine dosing at the intake head to prevent emissions to the environment would be used. There would also be no discharges of process and maintenance chemicals (with the

exception of phosphorous) and a diffuser head would be used on the outfall. With these measures in place, the effects on marine water quality and sediments were assessed as **not significant.** Furthermore, the discharges to the marine environment would be controlled and monitored under an Environmental Permit by the Environment Agency.

In conclusion, the temporary desalination plant does not result in new or materially different likely significant effects compared to those identified within **Volume 2, Chapter 21** of the **ES** [AS-034] and the subsequent **ES Addenda** [AS-181] for the marine water quality and sediments assessment.

f) Marine Ecology and Fisheries

The marine ecology and fisheries assessment of the temporary desalination plant considered likely effects from dredging, discharges, construction activities and the physical presence of the intake and outfall heads in the marine environment, and the abstraction of marine water. The following pressures from these activities were assessed:

- habitat change due to the removal of substratum;
- changes in suspended sediment concentration from dredging and sedimentation rate changes;
- underwater noise;
- visual disturbance;
- physical change to another seabed type and abrasion / physical disturbance;
- spread of indigenous species;
- loss of access to fishing areas;
- entrainment as a result of water abstraction (it is noted that the water abstraction for the desalination plant is equivalent to less than 0.09% of the proposed cooling water abstraction once operational);
- changes in salinity; and
- pollution from other chemical changes (including heavy metal contamination and nutrient enrichment).

In addition to the measures described within **sections 3.2d) and 3.2e)**, a screen with a 2mm mesh would be installed on the intake head to prevent the ingress of glass eels and other early life stages of fish and larger invertebrates. The headworks would be positioned orthogonal to tidal currents to reduce the tidal forcing against the screens and minimise approach velocities. With these measures in place, the effects on all marine ecology and fisheries receptors were assessed as **not significant.**

In conclusion, the temporary desalination plant does not result in new or materially different likely significant effects compared to those identified within **Volume 2, Chapter 22** of the **ES** [APP-317] and the subsequent **ES Addenda** [AS-181] for the marine ecology and fisheries assessment.

g) Marine Historic Environment

The temporary desalination plant would introduce new construction activities that could impact upon the marine historic environment. However, the assessment has identified that there would be no adverse effects to known wreck sites and the likely geomorphological impacts of the proposed intake and outfall structures would be not significant. A protocol for reporting finds during dredging would also apply, as for all dredging activities for the Sizewell C Project. Therefore, the likely effects have been assessed as **not significant** and there would be no change to the assessment presented in **Volume 2**, **Chapter 23** of the **ES** [APP-334], as updated by the subsequent **ES Addenda** [AS-181].

h) Marine Navigation

The presence of the vessels associated with the construction and maintenance of the desalination intake and outfall and the structures themselves have the potential to result in an increased navigation risk. A summary of the updated assessment is provided below. In conclusion, the temporary desalination plant does not change the conclusions of **Volume 2, Chapter 24** of the **ES** [APP-337], as updated by the subsequent **ES Addenda** [AS-181] with regards to the marine navigation assessment.

i. Presence of Construction and Maintenance Vessels

The presence of construction and maintenance vessels would result in an increased collision risk and increase disruption to local fishermen and recreational uses. Considering the mitigation measures identified within **Volume 2**, **Chapter 24** of the **ES** [APP-337] and that it is expected that the intakes and outfalls will be located within a buoyed construction zone, the risk is assessed as tolerable (**not significant**).

ii. Presence of the Desalination Intake and Outfall

The presence of the desalination intake and outfall would result in an increased risk of passing vessels grounding and could present a snagging risk for fishing vessels. The intake and outfall structures will be located within the Sizewell C Competent Harbour Authority area, within a buoyed construction zone and temporary safety zones would be deployed around sensitive areas of construction to safely manage navigation. The risk is therefore assessed as tolerable (**not significant**).

Any risk to the intake and outfall structures from a vessel dragging anchor onto them or anchoring in an emergency onto them will be mitigated by the buoyed construction zone and temporary safety zones, as required. The risk is therefore assessed as tolerable (**not significant**).

i) Major Accidents and Disasters

The temporary desalination plant would introduce additional construction activities within both the terrestrial and marine environment. The vulnerability of these activities to major accidents and natural disaster hazards and the potential for these new activities to give rise to new major accident hazards would be mitigated by the mitigation measures already set out within **Volume 2, Chapter 27** of the **ES** [APP-344]. In addition, the temporary desalination plant has been identified to introduce new risks with regards to marine navigation, as described within **section 3.2h)**. However, these risks would not be significant. Overall, the conclusions of the assessment would remain as set out within **Volume 2, Chapter 27** of the **ES** [APP-344], as updated by the subsequent **ES Addenda** [AS-181].

j) Cumulative Effects

In terms of the assessments presented within **Volume 10** of the **ES** [APP-572 to APP-580], as updated by the subsequent **ES Addenda** [AS-189, REP6-017], there is no change to the cumulative assessments for terrestrial environment topics and the transboundary effects assessments as a result of temporary desalination plant. This is because:

- There is no change to the conclusions of the terrestrial environmental assessments as a result of temporary desalination plant, which could give rise to new or different significant inter-relationship, project-wide effects or cumulative effects with other non-Sizewell C developments.
- The effects of the temporary desalination plant would not extend beyond the UK borders and therefore, no transboundary effects would occur as a result of Proposed Change 19.

An updated cumulative effects assessment for the marine environmental topics is presented within **Volume 1, Chapter 3** of the **Fourth ES Addendum**. The updated assessment concludes that there would be no change to the outcomes of the cumulative effects assessment presented within **Volume 10**, **Chapter 5** of the **ES** [APP-578] and the subsequent **ES Addenda** [AS-189], as a result of the Proposed Change 19.