SSSI Assessment Report

Hinkley Point C operational water discharge activity permit variation, EPR/HP3228XT/V005

Date: June 2023

Version: 2

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Contents

1. Formal notice

This is a formal notice from the Environment Agency to Natural England (NE) and Natural Resources Wales (NRW) to meet the requirements under Section 28I of the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act (CRoW) 2000).

This is the duty in relation to granting any consent, licence or permit for activities likely to damage Sites of Special Scientific Interest (SSSI). We must seek advice from Natural England before permitting any activities that may damage a SSSI within England and Natural Resources Wales for SSSIs within Wales.

This notice was sent to Natural England and Natural Resource Wales for consultation on 6 March 2023.

1.1. SSSIs relevant for assessment

SSSIs relevant for assessment have been identified as follows:

- Bridgwater Bay SSSI
- Blue Anchor to Lilstock SSSI
- Severn Estuary SSSI
- Steep Holm SSSI
- Flat Hold SSSI

The following SSSIs have also been considered in this assessment following consultation with Natural Resources Wales on the 6 March 2023:

- River Usk SSSI
- River Wye SSSI

1.2. Description of the proposal

NNB Generation Company (HPC) Limited (GenCo (HPC)) applied to vary (change) the permit that allows them to operate water discharge activities (WDAs) at the Hinkley Point C (HPC) site in Somerset, to remove conditions that relate to an acoustic fish deterrent (AFD) and add a waste stream for discharges from the fish recovery and return (FRR) system outlet.

The operation of HPC will require a continuous supply of water to serve the steam turbine condensers, removing waste heat from the system. The proposed direct cooling system would abstract seawater from the Bristol Channel via 2 intake tunnels, one for each UK EPR™ reactor unit. Each intake tunnel includes 2 low velocity side entry (LVSE) intake heads (a total of 4 LVSE intake heads).

After being used within the plant, the seawater would then be discharged back to the Bristol Channel at a higher temperature via a single outfall cooling water tunnel (serving both UK EPR™ units), approximately 1.8 km long.

A small proportion of the seawater will be discharged back to the Bristol Channel via a FRR system via a separate outfall tunnel, approximately 0.5 km long.

Figure 1 shows where the above cooling water intake and discharge (outfall) infrastructure will be located at HPC.

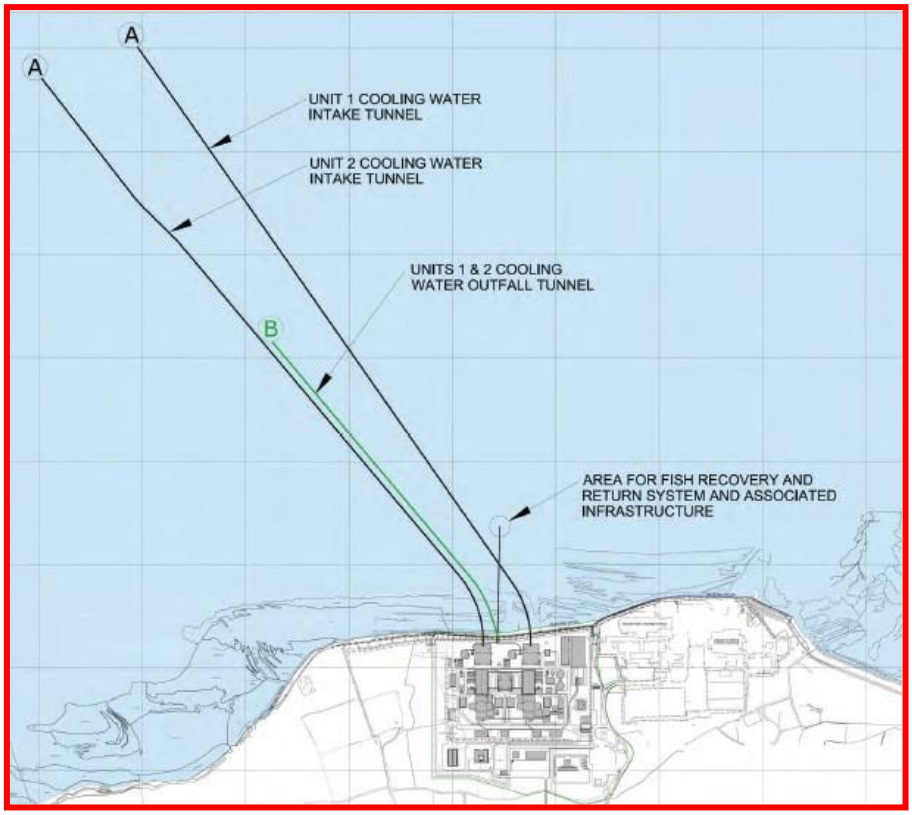


Figure 1 Schematic of cooling water system infrastructure showing intakes (A) and discharge outfall (B), and area of discharge point from the FRR system. (source: NNB GenCo (HPC))

When operating normally, the UK EPR™ reactor needs a maximum of around 67 cubic metres per second (m^3/s) (or 5.8 million cubic metres per day (m^3/d)) of cooling water. This would result in a maximum cooling water discharge from HPC of 134m^3/s (or 11.6 million m^3/d). This used cooling water would account for approximately 99% of the overall discharges from HPC, with the remainder made up of process effluents from various supporting systems, rainfall dependent site drainage, treated sewage effluent from staff welfare facilities, and the FRR system.

To protect the power station's cooling water system (by reducing risks of blockage/biofouling), the abstracted sea water will pass through a series of screens (drum and band). Any debris and biota (largely fish and crustaceans) larger than the screen mesh size will be trapped and removed (impinged). Some of this biota will still be alive, and therefore the FRR system will return this biota back to the receiving water body via the

dedicated outfall (at a suitable location where they are not likely to be returned to the cooling water intakes) (as summarised in **Figure 2**).

However, a proportion of this biota will not survive transit onto the screens and through the FRR system, and so dead or moribund (close to, or at the point of death) biota will also be returned to the Bristol Channel via the FRR system outfall. It is the discharge of this moribund biota that constitutes a potential source of polluting matter.

The FRR system will discharge a maximum of 1.26 m^3/s (108,863 m^3/d) of seawater. This sea water will be a proportion of the water abstracted for cooling, but it will not have passed through the cooling water system; it will remain at ambient temperature. Instead, it will be diverted via the FRR system. This is to provide a continuous flow through the FRR system to transport fish and crustaceans, that have been impinged within the cooling water system, along the FRR system and back to the Bristol Channel. **Figure 2** shows a diagram of the cooling water and FRR systems proposed at HPC.

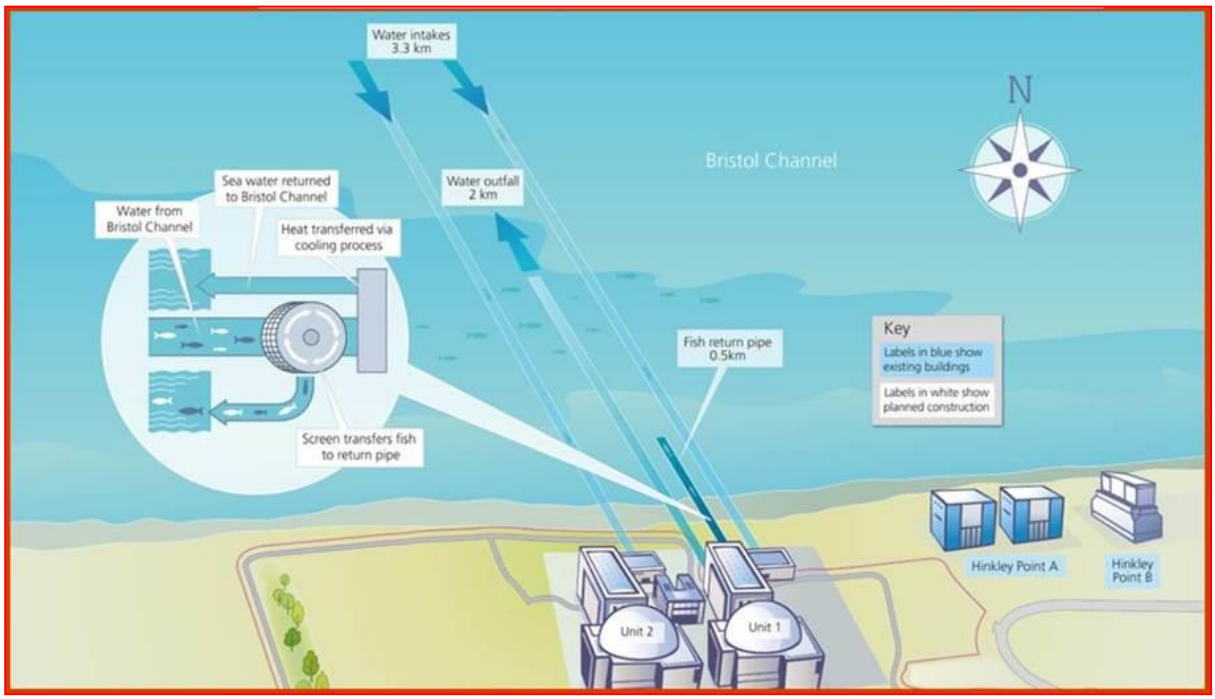


Figure 2 Summary of HPC cooling water abstraction and FRR system

NNB GenCo (HPC)'s application consisted of the relevant water discharge activity (WDA) environmental permit variation forms and a submission of information to provide the required detailed technical information to support their proposal. NNB GenCo (HPC) provided the following permit application documents as supporting information:

- Hinkley Point C operational water discharge activity environmental permit variation application: non-technical summary (ref: 101067444)
- Hinkley Point C cooling water infrastructure fish protection measures: report to discharge DCO requirement CW1 and marine licence condition 5.2.31 (ref: 100186617)
- technical report (TR479) – particle tracking study of impinged sprat from the proposed Hinkley Point C fish recovery and return (ref: 100805628)

- technical report (TR515) - Hinkley Point C water quality effects of the fish recovery and return system (ref: 100805626)
- updated report to inform the Habitats Regulations assessment (ref: 100161830)
- scientific position paper (SPP)105 – Predicted performance of the HPC LVSE intake heads compared with the HPB intake (ref: 100889387)
- scientific paper (SPP112) - Hinkley Point C impingement predictions corrected for Hinkley Point B raising factors and cooling water flow rates (and supporting raw data files) (ref: 100874130)
- TR456 – revised predictions of impingement effects at Hinkley Point C – 2018 (ref: 100805583)

For information, the above permit variation application documents are available on our GOV.UK website and consultation hubs at the following web link:

- Have your say on proposed change to permit conditions at Hinkley Point C - GOV.UK
- NNB Generation Company (HPC) Limited, EPR/HP3228XT/V005: environmental permit consultation

1.3. Location of the proposed activity

The new nuclear power station is currently being constructed on the west coast of the United Kingdom approximately 12km north-west of the town of Bridgwater in the county of Somerset. The site is immediately west of the 2 existing Hinkley Point A and Hinkley Point B power stations.

The FRR system discharge will be made approximately 500m offshore.

This will be located approximately:

- 200 m from the Bridgwater Bay SSSI
- 1 km north west from the Blue Anchor to Lilstock Coast SSSI
- 14 km south from the Steep Holm SSSI
- 14 km south east from Brean Down SSSI
- 16 km south west from the Severn Estuary SSSI
- 18 km south from the Flat Holm SSSI

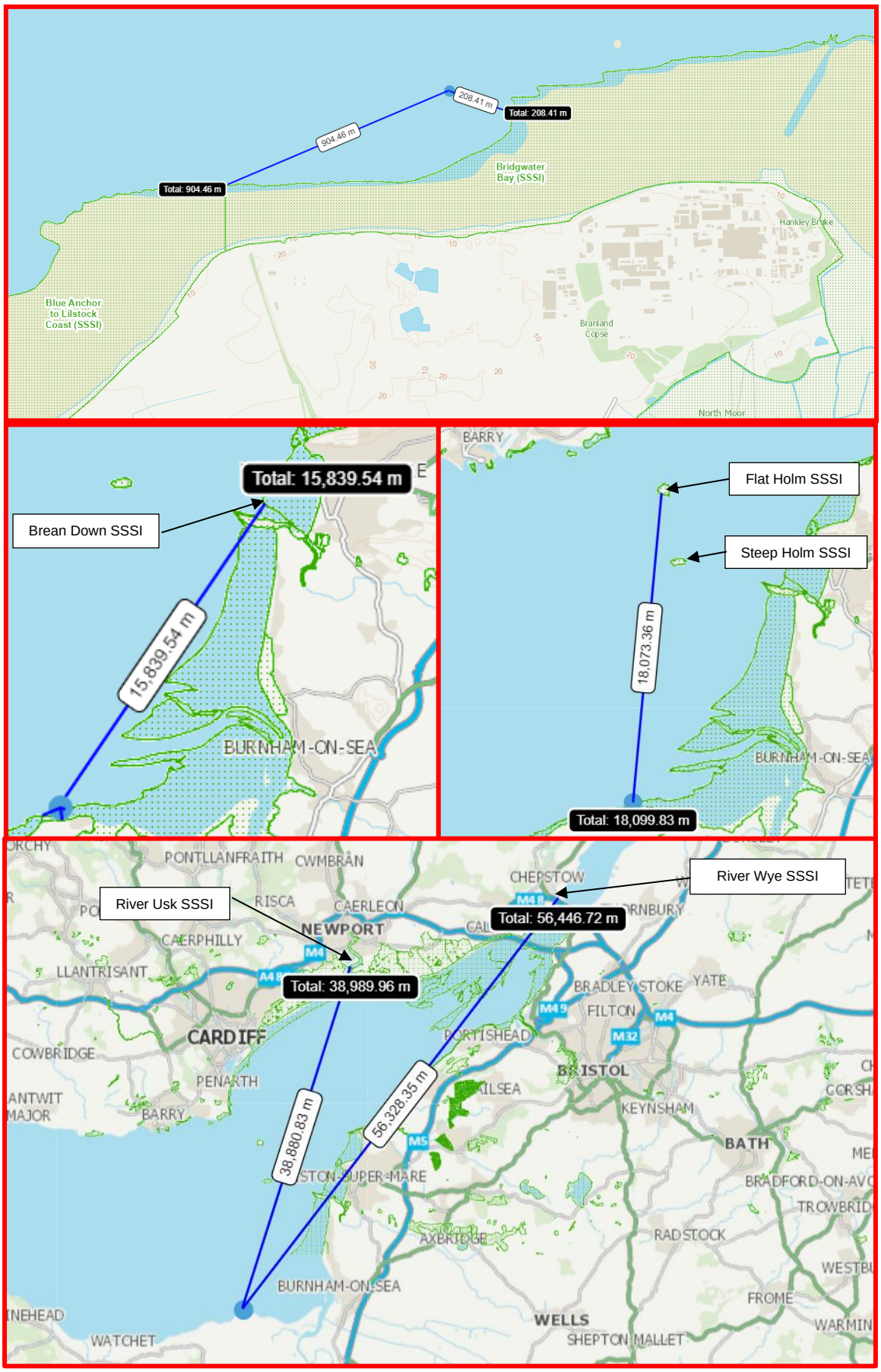
The SSSIs above have been included in this assessment because they are located within a single tidal excursion up or down the estuary from the proposed FRR system discharge point and are in hydraulic continuity with the discharge, i.e., there exists a pathway for impact. We consider the single tidal excursion to be an appropriate screening criteria within coastal/estuarine waters. In this location it equates to approximately 20 km in both directions.

The following SSSIs are also included due to the presence of migratory fish that are also features of the Severn Estuary SSSI:

- River Usk SSSI, approximately 40 km northeast from the discharge point

- River Wye SSSI, approximately 60 km northeast from the discharge point

Figure 3 Location and approximate distance from the boundaries of relevant SSSIs.



1.4. Consultation with statutory nature conservation bodies

Natural England (NE) and Natural Resources Wales (NRW) were both consulted as part of the application consultation process.

For information, as part of our determination of this WDA environmental permit variation application, we also completed the following assessment and sent it to NE and NRW for consultation:

- water discharge activity operational permit variation HRA, Hinkley Point C nuclear power station - March 2023 (2023 HRA)

2. Operations requiring consent

The following is the 'operation requiring consent' (or other activities associated with the work) that may cause damage and is relevant to the proposed works:

- dumping, spreading or discharge of any materials

As dead and moribund (close to, or at the point of death) biota will be returned to the Bristol Channel via the FRR system outfall and the settlement and breakdown of this material has the potential to produce a source of pollution.

The potential for toxic contamination from the discharge of polluting matter from the FRR system discharge has been assessed by calculating the mixing zones required for unionised ammonia and biological oxygen demand (BOD), to meet the respective EQS’.

Ammonia is toxic to fish species and can cause mortality in high concentrations. In water ammonia occurs in two forms: ionised ammonia (NH4+) and unionised ammonia (NH3). Unionised ammonia is the form that is toxic to fish. The relative amount of unionised ammonia is dependent on the temperature, salinity, and pH within the estuary.

Biochemical oxygen demand (BOD) is an indicator of organic pollution. It refers to the amount of oxygen required to break down any organic matter found in waterbodies. When organic matter is present in a water body, microorganisms use the dissolved oxygen in water to break down to organic matter. This action reduces the overall oxygen available within the area.

The breakdown of the dead biota discharged could also release nutrients. Eutrophication is the gradual increase and enrichment of ecosystems by nutrients, such as nitrogen (N) and/or phosphorus (P). For example, WDAs containing treated sewage effluent will have elevated phosphorus and nitrogen levels relative to the receiving water. The addition of nutrients may lead to changes in nutrient sensitive vegetation, either directly affecting protected habitats and species of flora, or indirectly affecting protected species dependent upon existing habitats.

When there are excessive nutrients in intertidal habitats, dense algal mats can form. These can smother the intertidal habitat, prevent oxygen and nutrient flow, and block light. Algal mats can also form a barrier to birds which feed by probing the intertidal mud. This

can, in turn, impact on the availability and suitability of bird breeding, rearing, feeding and roosting habitats.

In salt marshes, changes to the nutrient status of the underlying sediment (away from typical natural values) and the processes that allow the effective cycling of nutrients, may affect the vegetation communities.

High concentrations of nutrients in the water column can also cause ‘phytoplankton’ and opportunistic ‘macroalgae’ blooms, leading to reduced dissolved oxygen availability. This can impact sensitive fish, as well as biological communities living on or within the substrate, and therefore adversely affect the availability and suitability of bird breeding, rearing, feeding and roosting habitats.

There is also the potential for an indirect effect from nutrient enrichment, where the settlement of moribund biota on intertidal and subtidal habitats could result in a shift in their community composition. These areas could become dominated by predators such as crab and starfish.

Our assessment therefore focused on the following risks:

- toxic contamination
- nutrient enrichment
- smothering and indirect habitat loss

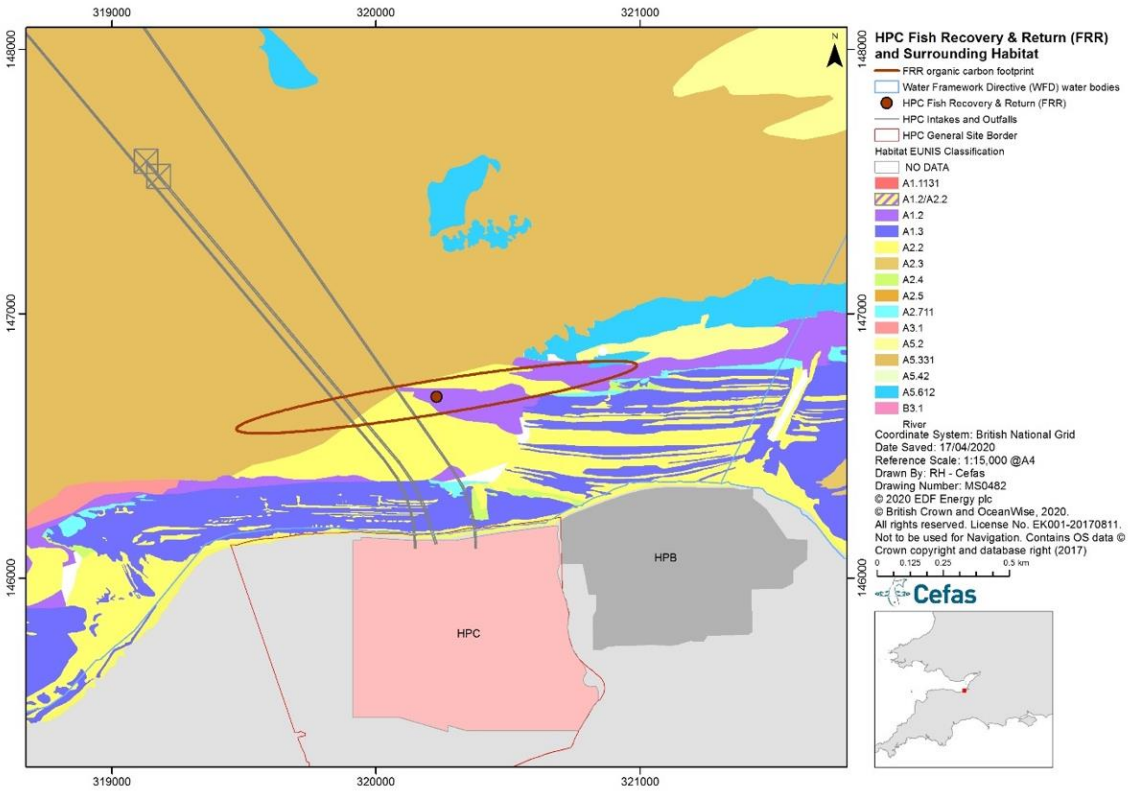


Figure 4 Location of the FRR discharge shown by the red dot, the red ellipse shows the worst-case footprint of the FRR system discharge. The colour shaded areas correspond to the different EUNIS habitats with EUNIS codes shown in the legend (Reproduced from the applicant’s technical report TR515)

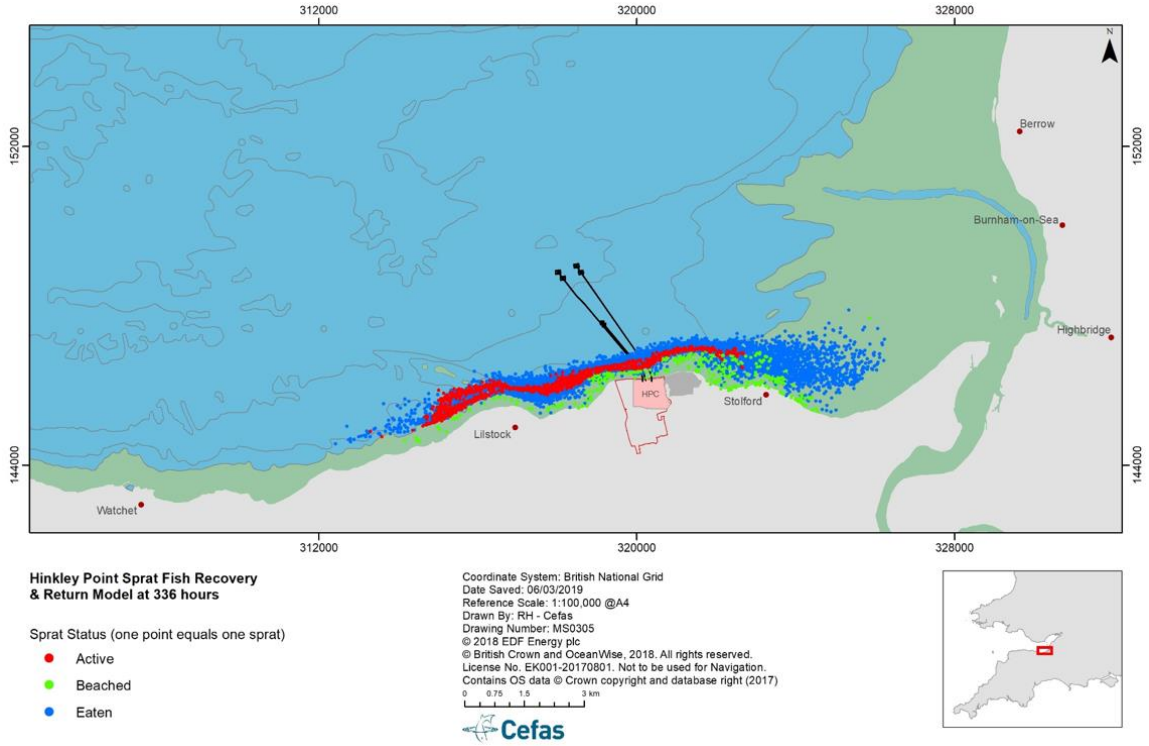


Figure 5 Map showing the modelled dispersal of biota from the FRR system discharge point. (Reproduced from applicant's technical report TR479)

2.1. Assessment of relevant SSSIs and notified features

2.1.1. Blue Anchor to Lilstock Coast SSSI (1001374)

Geological features:

- Hettangian, Sinemurian, and Pliensbachian
- Quaternary of Somerset
- Rhaetian
- coastal geomorphology

The key management principle for coastal geological sites is to maintain exposure of the geological interest by allowing natural processes to proceed freely. The proposals applied for present no risks that could interrupt these natural processes, therefore there is no exposure to these features because of the proposed WDA variation.

2.1.2. Bridgwater Bay SSSI

Aggregations of non-breeding birds

- black-tailed Godwit, Limosa limosa islandica
- curlew, Numenius arquata
- dunlin, Calidris alpina alpina
- redshank, Tringa totanus
- shelduck, Tadorna tadorna

- snipe, Gallinago gallinago
- teal, Anas crecca
- whimbrel, Numenius phaeopus
- wigeon, Anas penelope

There is potential exposure to these features as they are mobile species that will utilise the intertidal areas in the vicinity of the discharge. In particular, shelduck have been observed in large numbers of moulting birds rafting offshore.

However, as described within the 2023 HRA (section 9.1.1), the mixing zone in terms of toxic contamination is only an area of 11.4m², which is very localised to the FRR system discharge point. The footprint for potential nutrient enrichment is 0.064km², but predicted to be a narrow elliptical shape, running parallel to the coast with little potential to overlap with the supporting habitats of these features (Figure 4). The overall potential footprint of discharged matter is predicted to be around 11.3km² (2023 HRA, section 9.2), but it's expected that any reaching the intertidal habitats and saltmarsh that support these features will be rapidly consumed by scavenging gulls (Figure 5).

There is therefore no likely impact predicted.

Invertebrate assemblage

There is potential exposure to the feature where the invertebrate species utilise sub and/or intertidal habitats. However, any effects are predicted to be minimal due to the limited extent of the mixing zone in relation the habitats that will be utilised by these species.

Lowland ditch systems

No exposure due to very limited hydrological connectivity.

Check what grouping is

- S21 - Scirpus maritimus Swamp
- S4 - Phragmites australis swamp and reed-beds

No exposure due to very limited hydrological connectivity.

Saltmarsh habitat

- SM10 - transitional low marsh vegetation
- SM12 - Rayed Aster tripolium on saltmarsh
- SM13a - Puccinellia maritima saltmarsh, Puccinellia maritima dominant sub-community
- SM16a - Festuca rubra saltmarsh Puccinellia maritima sub-community
- SM17 - Artemisia maritima saltmarsh
- SM18 - Juncus maritimus saltmarsh
- SM23 - Spergularia marina - Puccinellia distans saltmarsh

- SM24 - Elytrigia atherica saltmarsh
- SM6 - Spartina anglica saltmarsh

These habitats can experience periodic hydrological connectivity with the estuarine waters (receiving environment of proposed discharge). However, due to the limited extent of the mixing zone created by the proposed FRR system discharge, there is no predicted exposure to these habitats.

Vascular plant assemblage

There is a potential pathway to some plant species depending on the habitats they utilise. However due to the limited extent of the mixing zone created by the FRR system discharge, there is no predicted exposure to these areas (and therefore no predicted damage to these plant species).

2.1.3. Severn Estuary SSSI

Aggregations of non-breeding birds

- curlew, Numenius arquata
- dunlin, Calidris alpina alpina
- grey Plover, Pluvialis squatarola
- redshank, Tringa totanus
- ringed Plover, Charadrius hiaticula
- shelduck, Tadorna tadorna

There is potential exposure to these features as they are mobile species that will utilise the intertidal areas in the vicinity of the discharge. Shelduck that have been observed in large numbers of moulting birds rafting offshores.

However, as described within the 2023 HRA (section 9.1.1), the mixing zone in terms of toxic contamination is only an area of 11.4m², which is very localised to the FRR system discharge point. The footprint for potential nutrient enrichment is 0.064km², but predicted to be a narrow elliptical shape, running parallel to the coast with little potential to overlap with the supporting habitats of these features (Figure 4). The overall potential footprint of discharged matter is predicted to be around 11.3km² (2023 HRA, section 9.2), but it's expected that any reaching the intertidal habitats and saltmarsh that support these features will be rapidly consumed by scavenging gulls (Figure 5).

There is therefore no likely impact predicted.

Fish species

- Atlantic salmon, Salmo salar
- allis shad, Alosa alosa
- twaite shad, Alosa fallax
- brown trout/sea trout, Salmo trutta

- European eel, Anguilla anguilla
- river lamprey, Lampetra fluviatilis
- sea lamprey, Petromyzon marinus

There is potential exposure to these features as they are mobile species that will utilise the subtidal area in the vicinity of the discharge. Twaite shad, sea trout and European eel show tendencies to reside or seek shelter within the mid depth inshore reaches and are more likely to be affected by the discharge.

However as described within the 2023 HRA (section 10.1.1), any effects are predicted to be minimal. This is due to the limited extent of the mixing zone and the transient nature of any exposure within the small area of EQS (environmental quality standard) exceedance (an area of just 11.4m² for unionised ammonia).

Estuaries

There is potential exposure to these features as they are mobile species that will utilise the intertidal areas in the vicinity of the discharge. In particular shelduck have been observed in large numbers of moulting birds rafting offshores.

However, as described within the 2023 HRA (section 12.2.1), the mixing zone in terms of toxic contamination is only an area of 11.4m², which is very localised to the FRR system discharge point. The footprint for potential nutrient enrichment is 0.56km², but predicted to be a narrow elliptical shape, running parallel to the coast with little potential to overlap with the supporting habitats of these features (Figure 4). And the overall potential footprint of discharged matter predicted to be around 11.3km² (2023 HRA, section 9.2), but it's expected that any discharged matter will be rapidly consumed by scavenging gulls (Figure 5).

There is therefore no likely impact predicted.

Coastal shoreline habitats

- exposed rocky shores
- moderately exposed rocky shores
- muddy gravel shores
- sheltered muddy shores
- shores of mixed substrata

These habitats can experience periodic hydrological connectivity with the estuarine waters (receiving environment of proposed discharge). However, due to the limited extent of the mixing zone created by the proposed FRR system discharge, there is no predicted exposure to these habitats.

Grassland habitats

- MG11 - Festuca rubra - Agrostis stolonifera - Potentilla anserina grassland
- MG12 - Festuca arundinacea

- MG13 - Agrostis stolonifera - Alopecurus geniculatus grassland

No exposure due to no hydrological connectivity between these terrestrial features and the estuarine environment.

Saltmarsh habitats

- SM1 - Zostera communities
- SM10 - transitional low marsh vegetation with Puccinellia maritima, annual Salicornia species and Suaeda maritima
- SM12 - rayed Aster tripolium on saltmarsh
- SM13a - Puccinellia maritima saltmarsh, Puccinellia maritima dominant sub-community
- SM14 - Atriplex portulacoides saltmarsh
- SM15 - Juncus maritimus - Triglochin maritima saltmarsh
- SM16a - Festuca rubra saltmarsh Puccinellia maritima sub-community
- SM17 - Artemisia maritima saltmarsh
- SM18 - Juncus maritimus saltmarsh
- SM23 - Spergularia marina - Puccinellia distans saltmarsh
- SM24 - Elytrigia atherica saltmarsh
- SM28 - Elytrigia repens saltmarsh
- SM6 - Spartina anglica saltmarsh
- SM8 - annual Salicornia saltmarsh
- SM9 - Suaeda maritima saltmarsh

These habitats can experience periodic hydrological connectivity with the estuarine waters (receiving environment of proposed discharges). However, due to the limited extent of the mixing zones, there is no predicted exposure to these habitats.

Vascular plant assemblage

There is a potential pathway to some plant species depending on the habitats they utilise. However due to the limited extent of the mixing zones created by the proposed discharge, there is no predicted exposure to these areas or to these plant species.

2.1.4. Brean Down SSSI

Lowland calcareous grassland

No exposure due to no hydrological connectivity with these terrestrial features.

Geological features

- Pleistocene vertebrata

The key management principle for coastal geological sites is to maintain exposure of the geological interest by allowing natural processes to proceed freely. The proposals applied

for present no risks that could interrupt these natural processes, therefore there is no exposure to this feature.

Vascular plant assemblage

There is a potential pathway to some plant species depending on the habitats they utilise. However due to the limited extent of the mixing zones, there is no predicted exposure to these areas and therefore to these plant species.

2.1.5. Steep Holm SSSI

Vascular plant assemblage

There is a potential pathway to some plant species depending on the habitats they utilise. However due to the limited extent of the mixing zones, there is no predicted exposure to these areas and therefore to these plant species.

2.1.6. Flat Holm SSSI

The key management principle for coastal geological sites is to maintain exposure of the geological interest by allowing natural processes to proceed freely. The proposals applied for present no risks that could interrupt these natural processes, therefore there is no exposure to the carboniferous geology feature of the SSSI.

The following features are not relevant for assessment due to a lack of hydrological connectivity:

- coastal grassland
- maritime cliff and associated ledges
- the wild leek

Breeding colony of lesser black-backed gulls

There is potential exposure to this species as they are mobile may utilise the intertidal areas in the vicinity of the discharge.

However as described within the 2023 HRA (section 12.2.1), the mixing zone in terms of toxic contamination is only 11.4m² which is very localised to the discharge point. The footprint for potential nutrient enrichment is 0.064km², but predicted to be a narrow elliptical shape, running parallel to the coast with little potential to overlap with the supporting habitats of these features (Figure 4). And the overall potential footprint of discharged matter predicted to be around 11.3km² (2023 HRA, section 9.2), but it's expected that any reaching the intertidal habitats and saltmarsh that support these features will be rapidly consumed by scavenging gulls (Figure 5).

There is therefore no likely impact predicted.

2.1.7. River Usk SSSI

The migratory fish species are the only feature of the River Usk SSSI that are relevant for consideration in this assessment. All other features are not relevant sue to a lack of hydrological connectivity with the FRR system outlet.

Migratory fish species

- Atlantic salmon, Salmo salar
- twaite shad, Alosa fallax

There is potential exposure to these features as they are mobile species that will utilise the subtidal area in the vicinity of the discharge. Twaite shad, sea trout and European eel show tendencies to reside or seek shelter within the mid depth inshore reaches and are more likely to be affected by the discharge.

However as described within the 2023 HRA (section 10.1.1), any effects are predicted to be minimal. This is due to the limited extent of the mixing zone and the transient nature of any exposure within the small area of EQS (environmental quality standard) exceedance (an area of just 11.4m² for unionised ammonia (2023 HRA, section 9.2)).

2.1.8. River Wye SSSI

Fish species

- Atlantic salmon, Salmo salar
- allis shad, Alosa alosa
- twaite shad, Alosa fallax

There is potential exposure to these features as they are mobile species that will utilise the subtidal area in the vicinity of the discharge. Twaite shad, sea trout and European eel show tendencies to reside or seek shelter within the mid depth inshore reaches and are more likely to be affected by the discharge.

However as described within the 2023 HRA (Section 10.1.1), any effects are predicted to be minimal. This is due to the limited extent of the mixing zone and the transient nature of any exposure within the small area of EQS (environmental quality standard) exceedance (an area of just 11.4m² for unionised ammonia (2023 HRA, section 9.2)).

3. SSSI assessment conclusion

The permission is **not likely to damage** any of the flora, fauna or geological or physiological features which are of special interest because of conditions.

The proposed FRR system discharge has the potential to cause very localised elevations in toxic contaminants in the vicinity of the discharge point due to the breakdown of dead and/or moribund biota. It also has the potential to introduce additional nutrients over a small area due to the breakdown of this biota. Habitat smothering from the accumulation of this biota has also been considered and assessed, although poses minimal risk due to the dynamic estuarine environment it is to be release in to.

The permission will therefore be granted with a condition limiting the amount of biomass that can be discharged from the FRR system. This will therefore limit the amount of polluting matter (dead and moribund biomass) that can be discharged, equivalent to the worst-case scenario modelled during our assessments that did not predict any likely damage to any of the flora, fauna or geological or physiological features which are of special interest.

3.1. Consultation with NE and NRW

NE and NRW were consulted on the 6 March 2023, NE responded on the 16 March and NRW responded on the 24 March.

They advised that the operation can go ahead.

List of abbreviations

Term	Meaning
BOD	Biochemical oxygen demand
DCO	Development consent order
DIN	Dissolved inorganic nitrogen
EA	Environment Agency
EDF	Électricité de France
EPR™	European pressurised reactors
EQS	Environmental quality standard
FRR system	Fish recovery and return system
HPC	Hinkley Point C
HRA	Habitats regulations assessment
NE	Natural England
NRW	Natural Resources Wales
SSSI	Sites of Special Scientific Interest
WDA	Water discharge activity
NH_4+	Ionised ammonia
NH_3	Unionised ammonia
N	Nitrogen
P	Phosphorus

Glossary

Term	Meaning
Activity	A generic title for the practices or operations which require to be permitted (unless exempted from the need for a permit).
Biofouling	The accumulation of microorganisms, plants, algae or small animals where it is not wanted such as on marine infrastructure, where it can impede the structure's function.
Biota	In the context of our assessment, biota refers to animals (intact or otherwise) that have passed through the fish recovery and return System (ctenophores and jellyfish are excluded from our impingement mortality calculations).
Environmental quality standard (EQS)	The concentration and a corresponding statistic (for example, mean or 95th percentile) below which a substance is not believed to be detrimental to aquatic life, based on the results of toxicity tests on organisms covering a range of levels within food chains. Each substance has its own EQS, which can differ depending on whether the receiving environment is fresh, transitional or coastal water.
Eutrophication	The increase in primary productivity and subsequent impacts on an ecosystem that arise as a result of inputs of nutrients (which can be human) raising ambient nutrient concentrations.
Fish recovery and return system	A system by which impinged fish and invertebrates will be washed off the rotating screens that protect the cooling water system and returned to sea through dedicated outlets.
Habitats Regulations	The Conservation of Habitats and Species Regulations 2017 (as amended).
Macroalgae	Macroalgae are part of the algae family and range completely in size and form. We commonly refer to them as seaweed.
Mixing zone	The mixing zone is the area around a discharge within which a quality standard is exceeded. The role of the regulator is to ensure that the size of the mixing zone is small enough so as

	to not impact on the function of the wider waterbody or habitat.
Moribund	Where an organism is at the point of death. In our mortality calculation, we have used the term moribund biota to mean biota passing through the FRR system that is dead and acts as a polluting matter.
Nutrient enrichment	The introduction of additional and/or new nutrients into a waterbody or other environment. This can cause disruption to the existing water quality regime and therefore impact on species and habitats.
Phytoplankton	Freely floating organisms which are able to photosynthesise; often minute organisms that move with water currents, for example, single-celled algae.
Tidal excursion	The horizontal distance that a particle moves during one tidal cycle of ebb and flood.

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