EDF Energy Nuclear Generation Ltd

Decommissioning of Hinkley Point B Nuclear Power Station

Outline Environmental Management Plan

August 2024

Public

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1 Introduction

1.1.1. Hinkley Point B Nuclear Power Station (HPB), located within the Nuclear Site Licence Boundary (hereafter referred to as 'the Site'), ceased generation of electricity in August 2022. Defueling of the reactors commenced shortly after with this process due to be completed in 2026. Decommissioning, namely the dismantling and decommissioning of plant and buildings that are part of the power station (the 'Proposed Works'), is anticipated to start shortly after completion of defueling.

1.1.2. Prior to the commencement of decommissioning activities at the Site, EDF (the current licensee of the Site)[1] [2], is legally required to gain consent to carry out decommissioning from the Office for Nuclear Regulation (ONR)) under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (as amended) (EIADR).

1.1.3. In accordance with the EIADR, this Outline Environmental Management Plan (EMP) has been prepared and will be submitted with application for decommissioning consent to summarise the environmental measures identified in the Environmental Statement (ES) (including monitoring measures). This document sets out the proposed structure and content of the future formal EMP (hereafter referred to as the 'formal EMP') to be utilised for the management of the decommissioning works and to provide confidence that the licensee will implement environmental management requirements for the Proposed Works following consent from the ONR. The formal EMP shall:

- identify the mitigation measures identified in the ES and evidence submitted (to the ONR) to verify information in the ES;
- identify the options to implement work activities where mitigation measures may be required but where selection of an option will only be possible in the future; and
- identify the work activities where mitigation may be required but where assessments to identify mitigation measures will only be possible in the future.

[1] A nuclear site licence granted by the ONR is a legal document, issued for the full life cycle of a nuclear facility. It contains site-specific information and defines the number and type of installations permitted. Such installations include nuclear power stations (like HPB), research reactors, nuclear fuel manufacturing and reprocessing, and the storage of radioactive matter in bulk.

[2] The Site Licensee is the holder of the nuclear site licence. The current Site Licensee for HPB is EDF. Following the end of generation and defueling, the Nuclear Decommissioning Authority (NDA) and Nuclear Restoration Services (formerly known as Magnox Limited, and a subsidiary of the NDA) will become the Site Licensee and the responsible party for implementing decommissioning at the Site.

2 Scope of the Environmental Management Plan

2.1 Overview

2.1.1. This Outline EMP has been prepared with the objective of outlining the approach to compliance with the relevant environmental legislation and recommended environmental measures to manage the Site for the Proposed Works outlined by the HPB EIADR ES. It identifies the potential impacts of the Proposed Works alongside the relevant environmental measures that need to be implemented to prevent or reduce effects upon relevant environmental receptors. This document also provides a review of monitoring requirements (frequency, duration) which will ensure the effectiveness of the implementation of these measures to prevent environmental effects during the Proposed Works.

2.1.2. This Outline EMP provides:

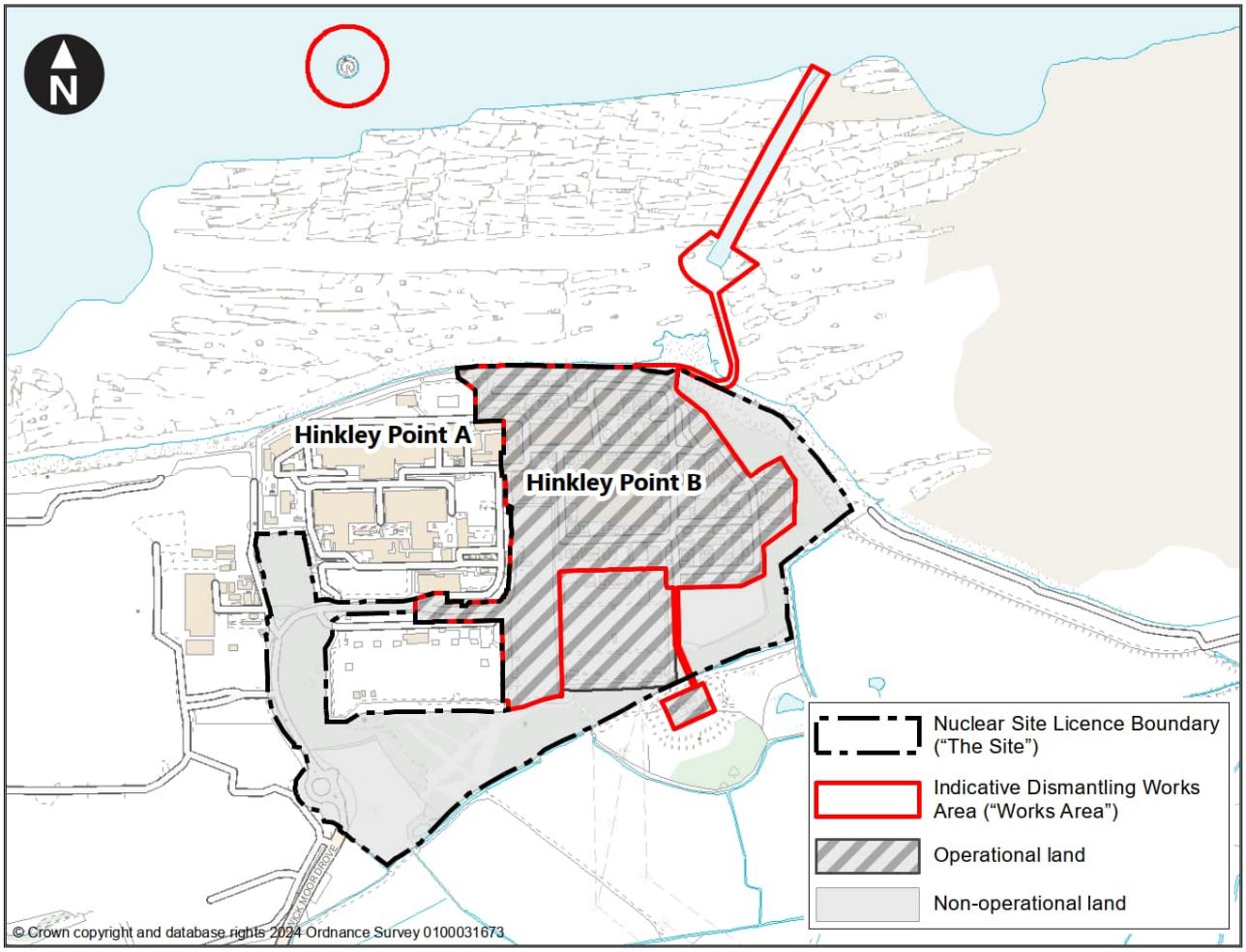
- A brief overview of the Site, Indicative Dismantling Works Area (hereafter the 'Works Area') and surrounding area;
- A summary of the environment impacts anticipated during each stage of the Proposed Works and a description of the environmental measures that are identified in the ES;
- The work activities where mitigation measures may be required but where assessments to identify mitigation measures will only be possible in the future (such as remediation of contaminated land identified by future monitoring); and
- The options to implement work activities where mitigation measures may be required but where selection of an option will only be possible in the future, and identification of the mitigation measures for those options, giving reasons for their selection.

2.1.3. This Outline EMP should be read in conjunction with **Chapter 2: The Decommissioning Process** within Volume I of the ES which provides an overview of the Proposed Works. A summary of the Proposed Works is provided in this section.

2.2 Geographical scope

2.2.1. The Nuclear Site Licence Boundary for HPB (the 'Site') is illustrated on **Graphic 2-1.** The Proposed Works cover areas within the Site as well as some areas outside of the nuclear site licence boundary, such as the those related to the cooling water infrastructure. To assist the identification of these areas for assessment, a Works Area has been identified as illustrated in **Graphic 2-1** and is approximately 22.7 hectares (ha).

Graphic 2-1 - Location of the Site and Works Area



2.3 Overview of the Proposed Works

2.3.1. The Applicant's strategy for decommissioning HPB is to achieve 'Early Safestore', by enclosing the two reactors and debris vaults in a Safestore structure which will ensure the integrity of the enclosed structures to enable the deferment of dismantling of these elements to a later date. To align with this strategy, the decommissioning process at HPB is planned to be delivered under three phases which are summarised as follows:

- Preparations for Quiescence:

  This phase includes the de-planting, dismantling and deconstruction of all plant and buildings not included within the Safestore structure on-site and the relevant management of wastes arising from the activities undertaken during this phase. In addition, it includes the modification of the existing reactor building to create the Safestore structure.

- Quiescence:

  A period of relative inactivity with management of a mainly quiescent state to allow further radioactive decay of materials within the Safestore. The duration of this phase is approximately 70 years, during which there would be a regime of continuous monitoring and surveillance, with periodic maintenance interventions as required.

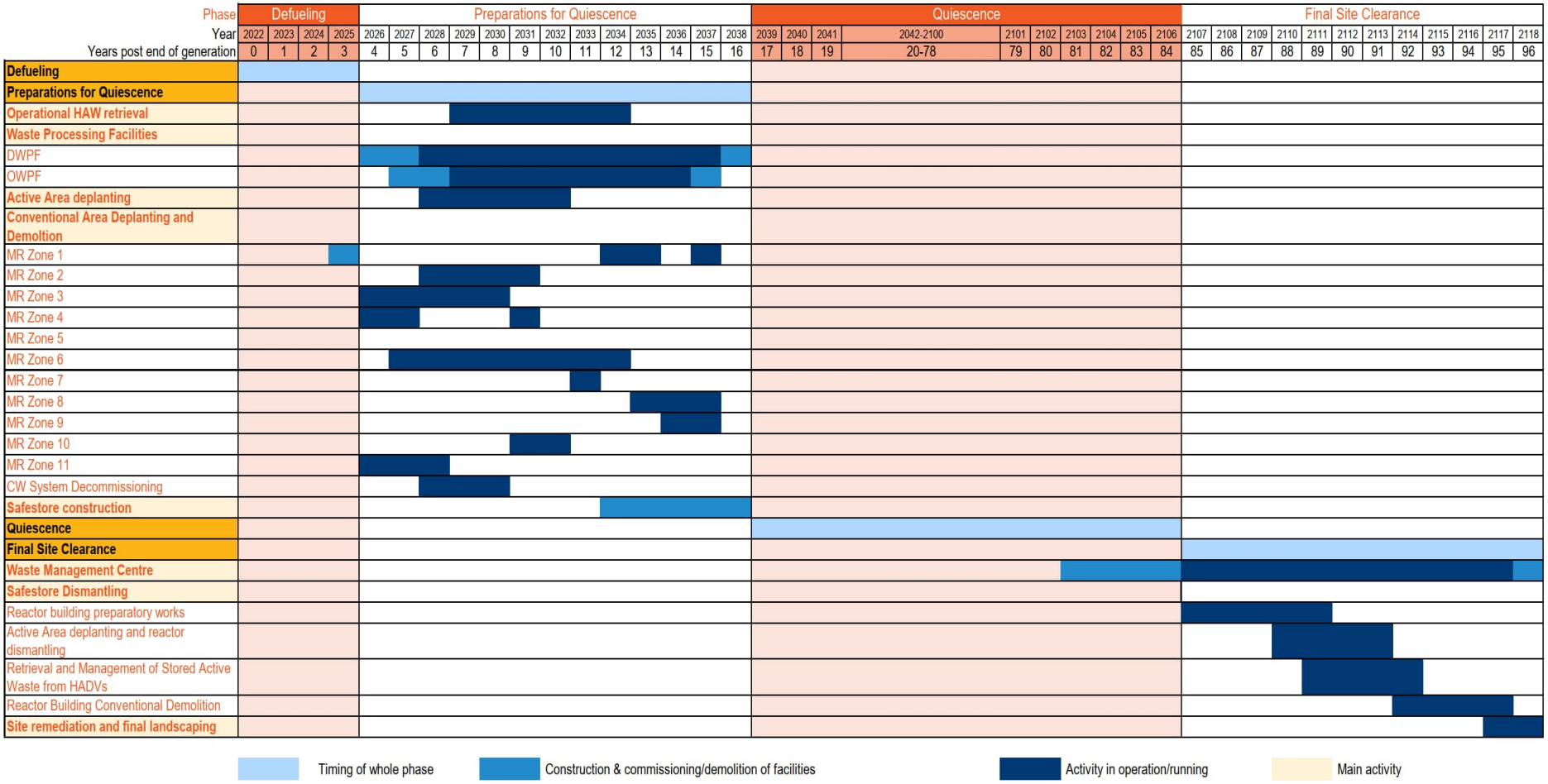
- Final Site Clearance:

  The reactors and debris vaults will be dismantled and removed. Construction and engineering works to prepare for these final dismantling tasks will take place to ensure the provision of the necessary infrastructure, services and facilities. Upon clearance and delicensing, the land will be released for future re-use.

2.3.2. An overview of the decommissioning timeline is provided in **Graphic 2-2**, with the Managed Retreat Zones illustrated on **Graphic 2-3**.

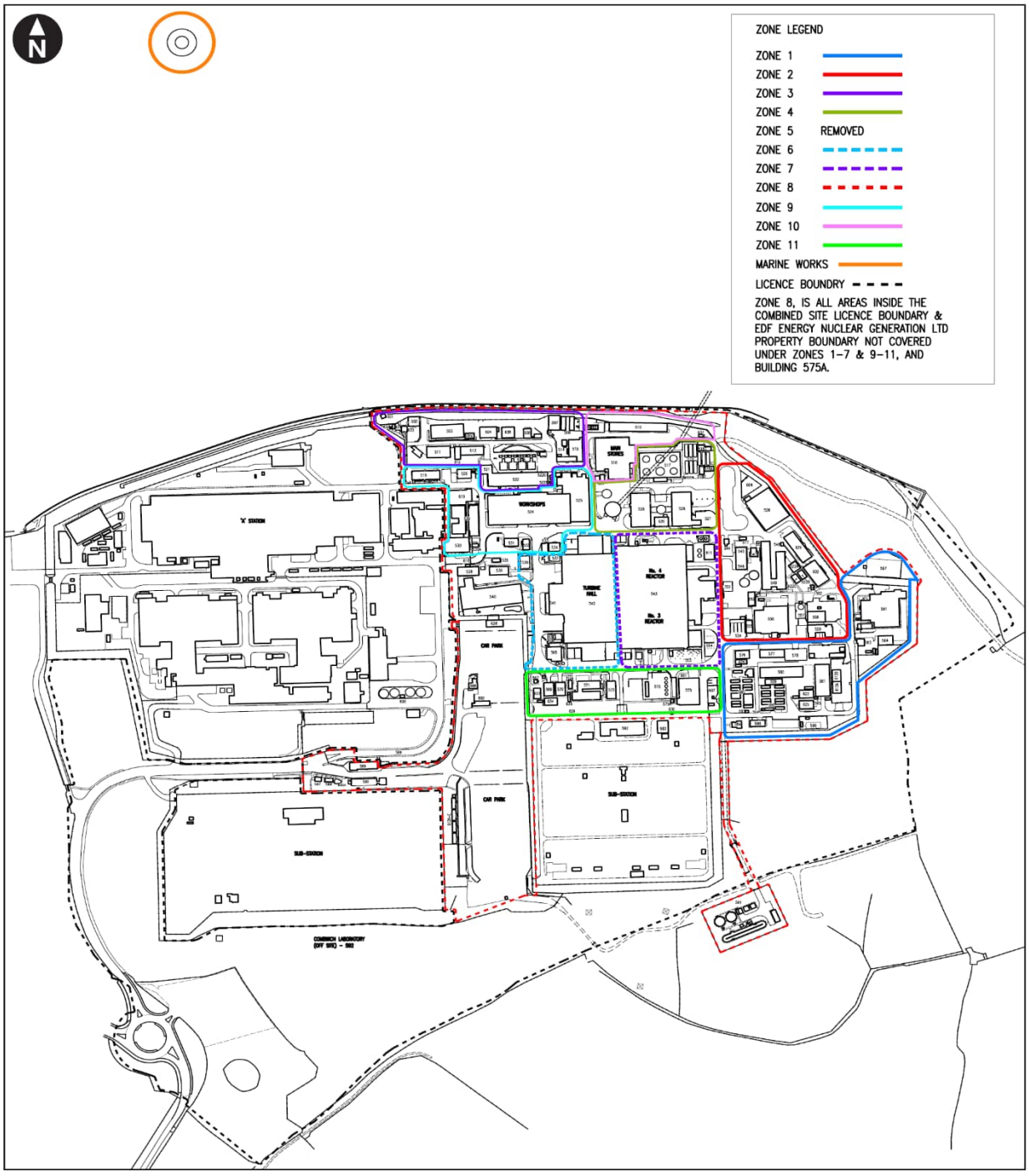
2.3.3. A comprehensive description of the Proposed Works is presented in **Chapter 2: The Decommissioning Process** within Volume I of the ES.

Graphic 2-2 - Decommissioning timeline



*Zone 5 incorporates the 400 kV substation and associated buildings to the south of the Works Area, which is on a long-term lease agreement to National Grid and is therefore not considered to be part of the Proposed Works.

Graphic 2-3 - Managed Retreat Zones



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2.4 Environmental aspects

2.4.1. Beneficial or adverse environmental impacts as a result of the Proposed Works which have been identified through the EIADR have been divided into 15 environmental aspect areas, as reported within the HPB EIADR ES including:

- Air quality;
- Climate change;
- Terrestrial biodiversity and ornithology;
- Marine biodiversity;
- Coastal management and water quality;
- Surface water and flood risk;
- Soils, geology and hydrogeology;
- Historic environment;
- Landscape and visual;
- Noise and vibration;
- Traffic and transport;
- People and communities;
- Major accidents and disasters;
- Conventional waste; and
- Radioactive waste and discharges.

2.4.2. Within the ES, a number of measures have been identified to manage the potential effects of the Proposed Works. The embedded measures described in the ES have been extracted and tabulated in **Section 5** of this Outline EMP**.**

2.4.3. It is expected that environmental mitigation measures may change in the future in light of experience and developing technologies. Where mitigation measures are still to be identified, developed in more detail, or require changes, these will be described in subsequent iterations of the formal EMP together with reasons for changes identified and justified.

3 The Site, Works Area and surrounding area

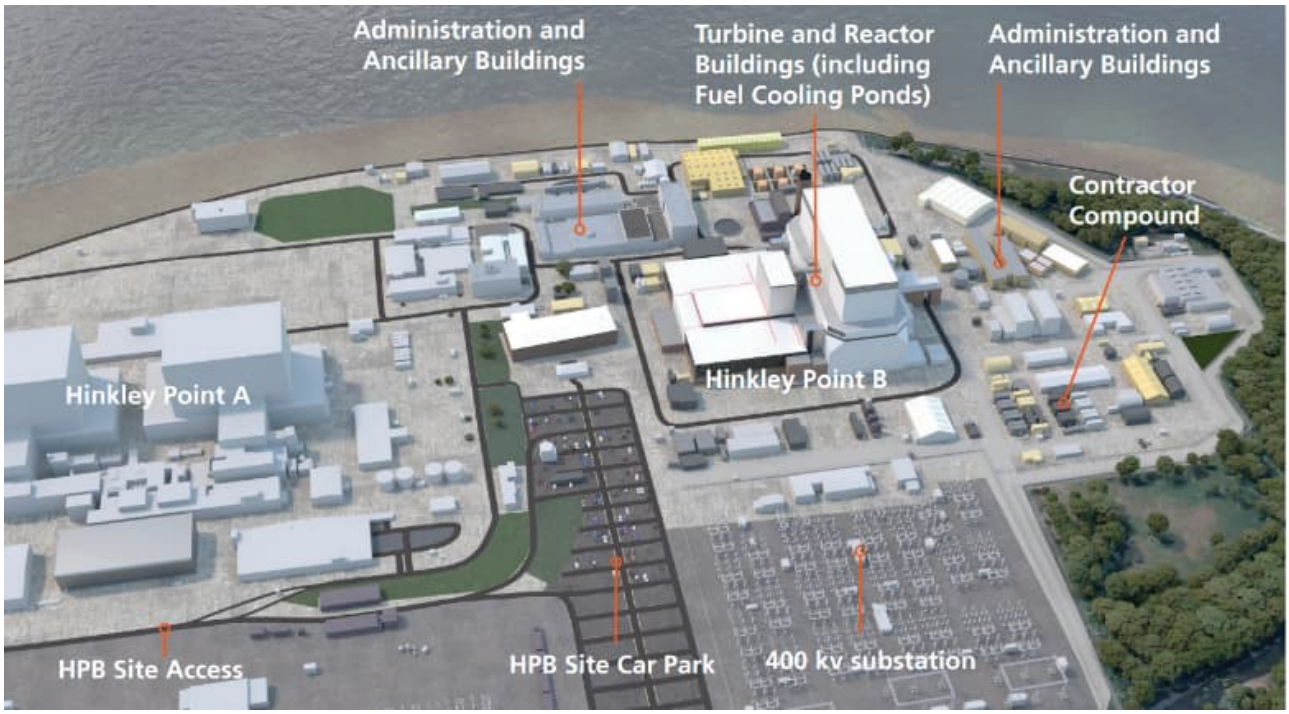
3.1 Site and Works Area description

3.1.1. The Site is located on the north coast of Somerset on the southern shore of the Severn Estuary. The land within the Site lies at an elevation of approximately 10m Above Ordnance Datum (AOD).

3.1.2. The Site is predominately comprised of hard standing and built development, where the buildings towards the centre of the Site house the reactors and adjoining turbine hall, with smaller ancillary buildings, warehouses and tanks around these central features.

3.1.3. Key structures on the Site are shown in **Graphic 3-1**.

Graphic 3-1 - Location of notable site features



3.1.4. Three key areas in the Works Area are:

- The Radiation Controlled Area (RCA) – this is made up of the reactor building and other plant and facilities with the potential to contain radioactive contamination;
- The Conventional Area – any infrastructure outside of the RCA and including elements outside of the security fence surrounding the Site that require removal; and
- The Marine Works Area – infrastructure associated with the water intake and outfall, and the offshore sections of the tunnels, which are not within the Site itself.

3.1.5. In addition to the above, a sewage treatment plant which lies to the south of the Site, and services foul water from the HPA and the Site, will also be deconstructed at the end of the Preparations for Quiescence phase.

3.2 Surrounding landscape

3.2.1. The Site is located approximately 12 km north-west of Bridgwater. Rural settlements of Wick, Burton, Shurton, Stogursey and Stolford are within 3 km of the Site. The Site lies within the jurisdiction of Somerset Council which is a Unitary Authority for somerset.

3.2.2. The Hinkley Point A Nuclear Power Station (HPA) which ceased generation in 1999 lies to the west of HPB and is currently undergoing decommissioning.

3.2.3. Immediately to the west of HPA is the Hinkley Point C Nuclear Power Station (HPC), which is currently under construction. The two European Pressurised Water Reactors for HPC (Units 1 and 2) are expected to commence generation at the end of the decade.

3.2.4. HPA and HPB at the current time is largely surrounded by land in agricultural use with regular medium sized fields divided by fence-lines and hedges. HPB is bounded to the south and east by a belt of woodland which screens the lower buildings within the Works Area from view. Beyond this, its surroundings are predominantly open, gently rolling, lowland with the land rising from the coast and then down into the Holford valley, before again rising and falling towards Bum Brook and the village of Shurton.

3.2.5. Offshore, intertidal mudflats are present surrounding the northern and eastern sides of the Site.

3.2.6. At low tide the shore adjacent to the Site comprises a narrow rock platform, interspersed with and fringed by mudflats; while to the east, the mudflats extend up to 500 m from the shoreline at low water.

3.2.7. To the south of the Works Area is a 400 kV substation which connect the station to the national transmission network.

3.3 Transport infrastructure

3.3.1. Two routes provide primary access for vehicles were considered within the ES. Both routes follow: Wick Moor Drove; unnamed road (known locally and hereafter as C182) between Shurton and the road to Otterhampton; Withycombe Hill; Cannington Bypass and the A39 between Cannington Bypass and Quantock Road/A38 at Bristol Road Traffic Signal Junction. The routes diverge at the A39/Quantock Road roundabout as follows:

- South Route: Quantock Road/Wembdon Road/North Street/Broadway (southwest from the A39/Quantock Road roundabout) to the A38 and the A38 to the M5 Junction 24 roundabout; and
- North Route: A39 (northwest from the A39/Quantock Road roundabout) to the Bristol Road (A38)/A39 Traffic Signal Junction then north on the A38 to the M5 Junction 23, via the A39.

3.3.2. The King Charles III England Coast Path, a nationally designated route follows the coast to the north of the Site. This is currently diverted whilst the construction works for HPC are ongoing, but the original alignment is intended to be reinstated shortly after the start of commencement of electricity generation at HPC.

3.4 Local watercourses and hydrogeology

3.4.1. There are a series of unnamed ditches, locally known as ‘rhynes’, to the east of the Site. These rhynes are ordinary watercourses, which are located in the operational catchment area of the Somerset Drainage Boards’ districts (including that of the Parrett Internal Drainage Board (IDB).

3.4.2. Within the Study Area, the nearest rhyne to the Site is the Wick Moor/Outfall Rhyne, which flows underneath Wick Moor Drove. It then passes underneath two culverted crossings of an existing access track which connects HPB to the station's Sewage Works. The rhyne then flows in a north-easterly direction for 450 m before discharging into the Severn Estuary at Hankley Brake via an outfall.

3.4.3. The majority of HPB is predominantly located in Flood Zone 1[3]. The exception is the Sewage Treatment Plant and surroundings which lie within the Works Area to the south of the Site boundary and are in Flood Zone 3[4].

3.5 Sensitivity of the receiving environment

3.5.1. **Table 3-1** provides a summary of the nearest sensitive human, biodiversity and heritage receptors which have been scoped into the EIA and considered within the ES. These are illustrated on **Graphic 3-2** and **Graphic 3-3.**

Table 3-1 - Summary of nearest sensitive human, biodiversity and heritage receptors considered within the scope of the ES

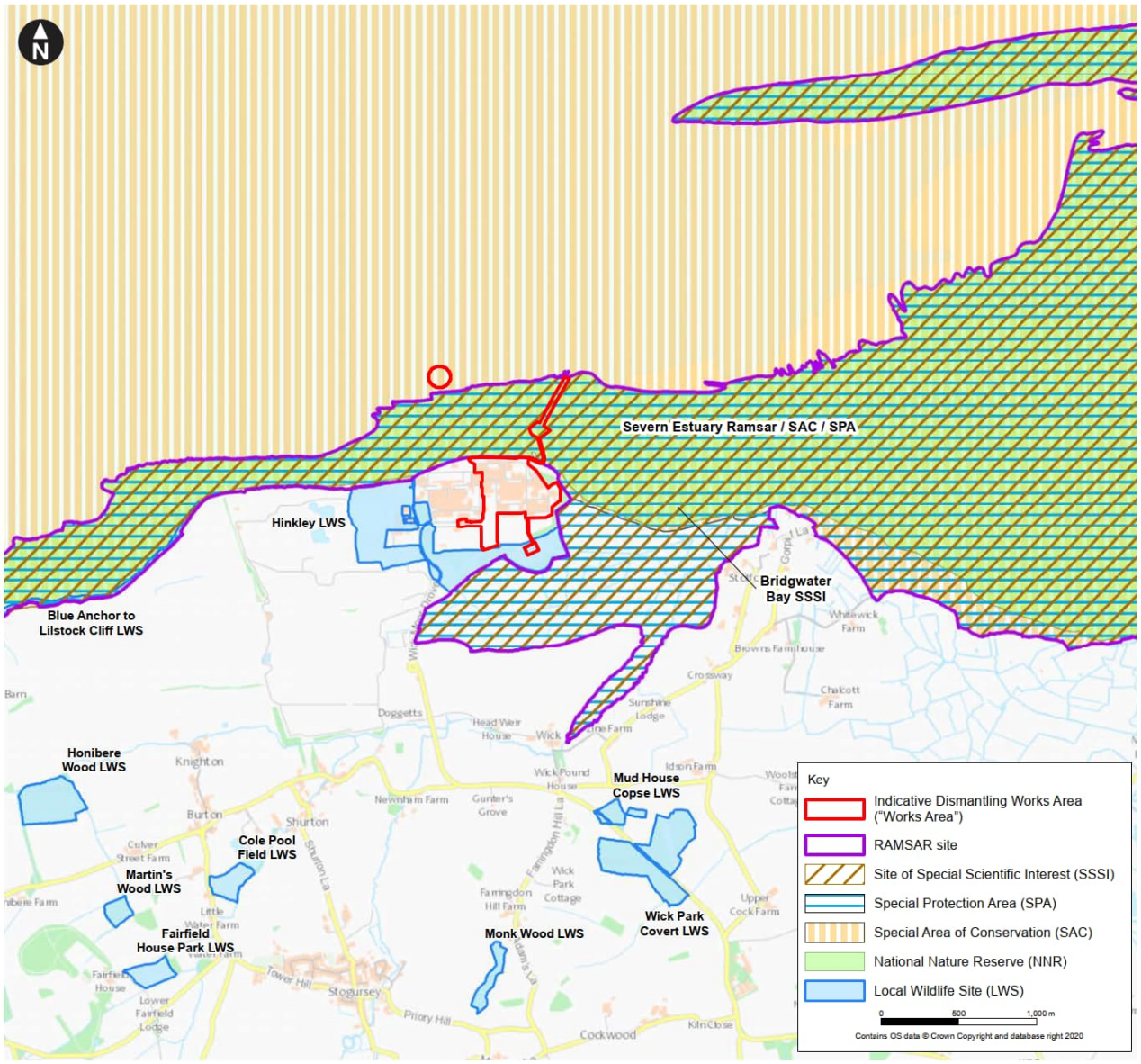
Nearest Receptors	Distance to the Works Area
Human	
Workers at Hinkley Point A power station	Adjacent
Residential property	Nearest permanent residential property includes Wick Farm approximately 1 km to the south of the Works Area, and residences within Stolford 1.2 km to the south.
Biodiversity	
Severn Estuary Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar	Works Area extends into these designated sites.
Exmoor and Quantock Oakwoods SAC	6.6 km south-west
Bridgwater Bay Site of Special Scientific Interest (SSSI)	Works Area extends into SSSI
Somerset Wetlands National Nature Reserve (NNR)	Works Area extends into NNR
Local Wildlife Sites including (Blue Anchor to Lilstock Cliff, Cole Pool Field, Fairfield House Park, Hinkley, Honibere Wood, Martin's Wood, Monk Wood, Mud House Copse and Wick Park Covert	Within 3 km

[3] Flood Zone 1 is the lowest risk flood zone. It signifies areas with less than a 0.1% annual probability of river or sea flooding, equating to less than 1 in 1000 chance

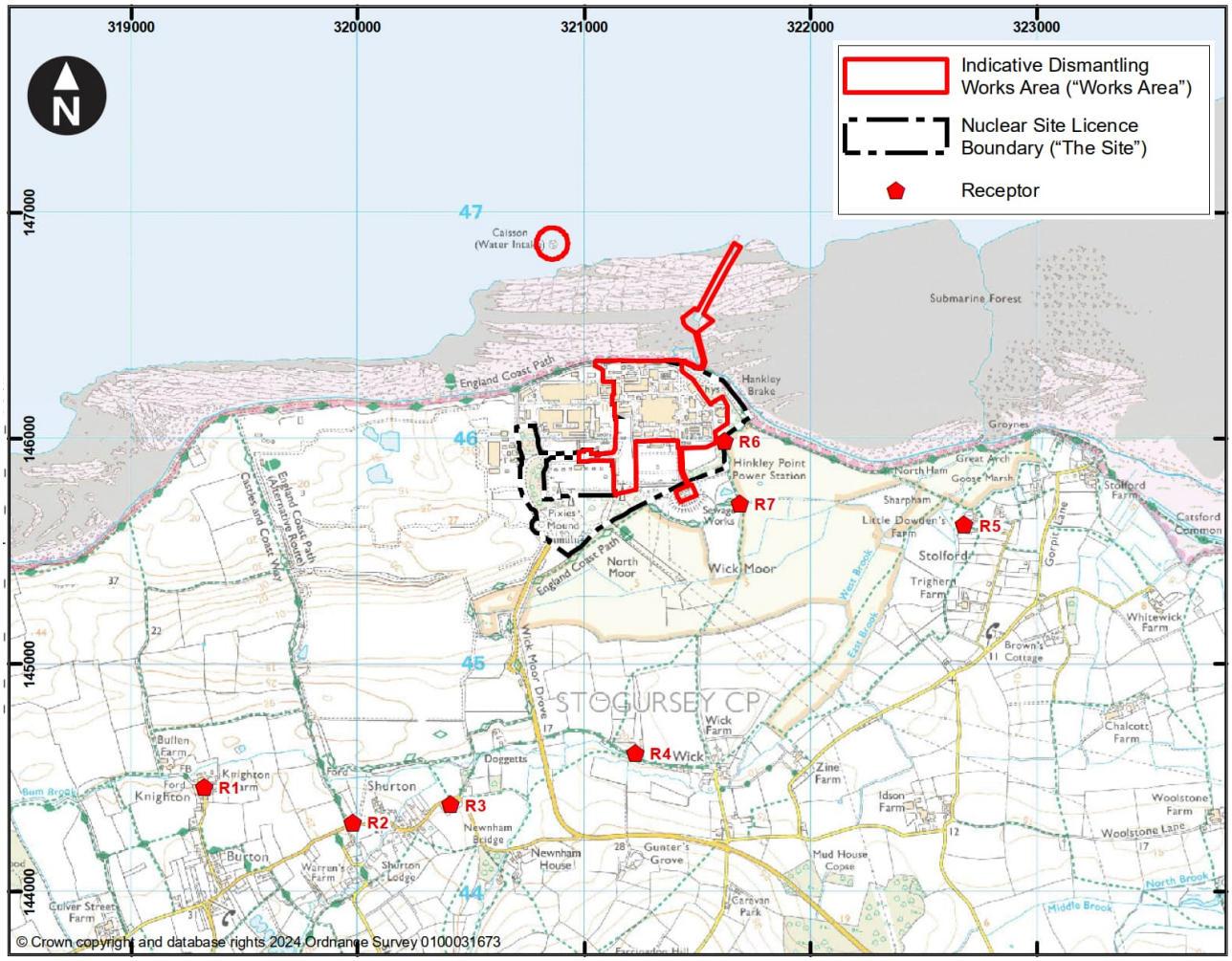
[4] Land having a 1% or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea.

Nearest Receptors	Distance to the Works Area
Heritage	
Scheduled monument, Pixie's Mound (NHLE 1006226)	268 m south-west
Grade II listed buildings: Zinc Farmhouse Wick Pound House	1.3 km
Grade II listed buildings in Stolford: Sea View, Stolford Farmhouse, D'Arches	1.55 km

Graphic 3-2 - Environmental context



Graphic 3-3 - Location of sensitive receptors



4 Site management

4.1 General Site Management

4.1.1. The majority of the Proposed Works, such as conventional deplanting and deconstruction and Safestore construction, will be limited to normal working hours between 07:30 and 18:00 hours Monday to Friday. There may be occasional infrequent exceptions when the working day may need to be extended in order to complete specific items of work safely. During the Preparations for Quiescence phase, it is anticipated that security personnel will remain on site 24 hours a day, seven days a week, using shift arrangements.

4.1.2. During the Quiescence phase, works on site would be infrequent. However, it is anticipated that any site monitoring or maintenance works would also be focused within normal working hours. During Final Site Clearance, it is likely the majority of works would be focused during normal working hours similar to the Preparations for Quiescence phase, although some shift working may be required.

4.1.3. During the Preparation for Quiescence phase, additional lighting may be necessary at the start and end of the working day during the winter months. Use of such lighting will be at the discretion of the relevant Site Supervisor. Compared to the current night-time illumination at the Site, any visual difference from this temporary additional lighting will be negligible and in-line with lighting that has been occasionally required during station outages during operation. Consideration will be given to the use of directional lighting to minimise any light spill when any further on-site lighting is required for the works. The existing security lighting will be retained through the Preparations for Quiescence phase.

4.1.4. It is anticipated that lighting requirements on site will reduce during the Quiescence phase before increasing during Final Site Clearance in areas around the Safestore to levels similar to those seen during the Preparations for Quiescence phase.

Security

4.1.5. A double security fence surrounds the Site and HPA. An additional internal fence separates the two power station sites (HPA and HPB). For works outside the security perimeter fence, the Works Area will be secured, typically using Heras type fencing.

4.1.6. In accordance with the Construction Design and Management (CDM) Regulations (Regulation 18), all working areas/sites will comply with either or both of the following:

- have its perimeter identified by suitable signs and be arranged so that its extent is readily identifiable; or
- be fenced off.

4.2 Waste management

4.2.1. During the Preparations for Quiescence phase, the production of waste on-site will vary dependent upon the programme of works ongoing in each year.

4.2.2. Anticipated conventional wastes arising from the Proposed Works may include metals, glass, plastics and other miscellaneous wastes similar to any other demolition of industrial type buildings. Due to the age of the buildings and plant at the Site, the demolitions will generate some hazardous wastes such as asbestos and lagging that will require special management during removal to protect both our workers and the environment.

4.2.3. All waste will be managed using the Site Licensee's existing procedures and processes.

4.2.4. The Proposed Works will require management of both Higher Activity Waste (HAW) and Lower Activity Waste (LAW). These waste streams are also frequently defined as Low Level Waste (LLW)[5], Intermediate Level Waste (ILW)[6] and High-Level Waste (HLW) which overlap the HAW and LAW categories.

4.2.5. Radioactive waste management comes under the Radioactive Substances Act 1993 and must demonstrate Best Available Technique (BAT) have been followed for onward management of radioactive waste. Radioactive wastes may be sent off-site for further treatment or compacted to minimise the volume of waste that requires disposal or long-term storage where this can be demonstrated to the BAT for that waste. There is no requirement for managing HLW during the Proposed Works[7]. Radioactive wastes and discharges will continue to be managed in accordance with the extensive regulations and processes already in place to manage their environmental effects and thus ensuring no significant effects on the environment.

4.2.6. Further detail is provided in **Chapter 2: The Decommissioning Process** within Volume I of the ES.

[5] LLW is defined as waste containing radioactive materials not exceeding 4 gigabecquerels per tonne (GBq/te) of alpha radioactivity or 12 GBq/te of beta/gamma radioactivity.

[6] ILW is defined as waste in which radioactivity levels exceed the upper boundaries for LLW, but which does not require its heat-generating properties to be taken into account in the design of storage or disposal facilities.

[7] In addition to the terms LLW and ILW, there are also some solid wastes that are potentially radioactive, but which can be shown to contain radioactivity at levels below the relevant exemption level specified under the Environmental Authorisations (Scotland) Regulations 2018, such that they become out of scope of the regulations and therefore are suitable for disposal as non-radioactive waste. In respect of their radioactive content these wastes are often described as being 'below regulatory concern'. Such wastes can be and are (as soon as possible after they arise) re-used, recycled or disposed of by whatever routes are appropriate, taking account of their non-radioactive characteristics and the Waste Hierarchy.

5 Environmental Measures

5.1.1. EDF has implemented a well-established integrated management system (IMS) across Nuclear Operations for decades; the IMS is a cornerstone of enacting normal business activities, as well as the generation and decommissioning strategies. While transitioning to decommissioning, EDF has strengthened our strong process culture which is documented in the IMS.

5.1.2. The two general aims of the IMS are:

- To improve the safety performance including environmental safety of the organisation through the planning, control, and supervision of safety related activities in normal, transient, and emergency situations; and
- To foster and support a strong safety culture through the development and reinforcement of good safety attitudes, values and behaviour in individuals and teams to allow them to carry out their tasks safely.

5.1.3. The IMS comprises of an extensive range of process; environmental management is one of the key IMS processes.

5.1.4. In addition to the IMS, the ES submitted as part of the application for consent to decommission HPB outlines potential impacts of the Proposed Works and the key embedded measures that have been identified for the three phases of decommissioning which have been included in this Outline EMP for completeness.

5.1.5. **Table 5-1** lists the embedded measures for each phase of the Proposed Works as outlined in the ES. Where appropriate, it has been identified where existing specifications and procedures within the IMS will deliver the proposed measures (as set out in **Table 5-1)**.

5.1.6. In addition to embedded measures, the ES also identified a series of good practice measures. These are actions that would occur with or without input from the EIA, and would be undertaken to meet other existing legislative requirements or actions that are considered to be standard practice used to manage commonly occurring environmental effects. These are also included in as set out in **Table 5-1**.Further development of these measures, where appropriate, will be outlined in the formal EMP.

Table 5-1 - Environmental measures identified across the Proposed Works

Aspect	Phases	Nature of impact	Type	Environmental Measure
Chapter 6: Air Quality Chapter 7: Climate Change Chapter 8: Terrestrial Biodiversity and Ornithology Chapter 12: Soils, Geology and Hydrogeology Chapter 16: Traffic and Transport	Preparations for Quiescence and Final Site Clearance	Dust emissions generated through the Proposed Works	Embedded	Appropriate Dust Management Plan(s) will be produced for demolition activities as part of the Proposed Works, in accordance with IAQM guidance on the Assessment of Dust from Demolition and Construction.
Chapter 6: Air Quality	Preparations for Quiescence and Final Site Clearance	Dust emissions generated through the Proposed Works	Good Practice	Stakeholder communication and management will be managed through existing arrangement e.g. Site Stakeholder Group (SSG).
Chapter 6: Air Quality	Preparations for Quiescence and Final Site Clearance	Dust emissions generated through the Proposed Works	Good Practice	Site management: Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken. Record any exceptional incidents that cause dust and/or emissions, either on- or off-site and the action taken to resolve the situation. Hold liaison meetings with other high risk construction sites within 250 m of the Site boundary (such as HPA / HPC) as appropriate.
Chapter 6: Air Quality	Preparations for Quiescence and Final Site Clearance	Dust emissions generated through the Proposed Works	Good Practice	Carry out appropriate site inspections to monitor compliance with the Dust Management Plan, record inspection results, and make an inspection record available to the relevant authority when requested. Increase the frequency of site inspections by the person accountable for air quality and dust issues on-site, when

Aspect	Phases	Nature of impact	Type	Environmental Measure
				activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. Undertake on-site and off-site inspections around high potential activities, where receptors (including roads) are nearby, to monitor dust. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary. Identify appropriate dust deposition, dust flux, or real-time PM10 continuous monitoring locations. Where appropriate commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences.
Chapter 6: Air Quality	Preparations for Quiescence and Final Site Clearance	Dust emissions generated through the Proposed Works	Good Practice	Preparing and maintaining site layout so that machinery and dust causing activities are located away from receptors, as far as possible. Erect solid screens or barriers around dusty activities as appropriate in consideration with the height of stockpiles on site. Where possible, fully enclose specific operations where there is a high potential for dust production and the area is active for an extensive period. Avoid site runoff of water or mud. Keep hoarding, barriers and scaffolding clean using wet methods. Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. Where appropriate, cover, seed or fence stockpiles to prevent wind whipping.
Chapter 6: Air Quality	Preparations for Quiescence and Final Site Clearance	Dust emissions generated through the Proposed Works	Good Practice	Ensure all vehicles switch off engines when stationary and not operating – no idling vehicles. Impose and signpost a suitable maximum-speed-limit on surfaced and un-surfaced haul roads and work areas.

Aspect	Phases	Nature of impact	Type	Environmental Measure
				Avoid the use of diesel- or petrol-powered generators and use low-carbon alternative equipment where practicable. Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).
Chapter 6: Air Quality	Preparations for Quiescence and Final Site Clearance	Dust emissions generated through the Proposed Works	Good Practice	Where possible, only use cutting, grinding or sawing equipment fitted, or in conjunction, with suitable dust suppression techniques such as water sprays or local extraction e.g. suitable local exhaust ventilation systems. Ensure an adequate water supply on the Site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. Use enclosed chutes and conveyors and covered skips where practicable. Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment, wherever appropriate. Ensure equipment readily available on-site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event, using wet cleaning methods.
Chapter 6: Air Quality	Preparations for Quiescence and Final Site Clearance	Dust emissions generated through the Proposed Works	Good Practice	Avoid burning of waste materials on Site.
Chapter 6: Air Quality	Preparations for Quiescence and Final Site Clearance	Dust emissions generated through the Proposed Works	Good Practice	Soft strip inside buildings before demolition. Ensure effective water suppression is used during demolition operations. Avoid explosive blasting, using appropriate manual or mechanical alternatives.

Aspect	Phases	Nature of impact	Type	Environmental Measure
				Bag and remove any biological debris or damp down such material before demolition.
Chapter 6: Air Quality	Preparations for Quiescence and Final Site Clearance	Dust emissions generated through the Proposed Works	Good Practice	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. Stockpiles of topsoil which remain present for six months or longer will be used (e.g. through seeding) to encourage stabilisation, minimise soil erosion and prevent infestation by nuisance weeds. Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. This will depend on conditions and season. Only remove the cover in small areas during work and not all at once.
Chapter 6: Air Quality	Preparations for Quiescence and Final Site Clearance	Dust emissions generated through the Proposed Works	Good Practice	Avoid scabbling if possible. Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.
Chapter 6: Air Quality	Preparations for Quiescence and Final Site Clearance	Dust emissions generated through the Proposed Works	Good Practice	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the Site. This may require the sweeper being continuously in use. At compound and access points, wheel wash or dust sweepers will be used. Avoid dry sweeping of large areas, where possible.

Aspect	Phases	Nature of impact	Type	Environmental Measure
				Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. Record all inspections of haul routes and any subsequent action . Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the Site where reasonably practicable). Where possible, ensure there is an adequate area of hard surfaced road between the wheel wash facility and the Site exit, wherever site size and layout permit. Access gates to be located at least 10 m from receptors where possible. Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned during activities with a high potential for creating dust as appropriate.
Chapter 7: Climate Change	All phases	Release of Greenhouse Gas (GHG) emissions arising from activities during the Proposed Works	Embedded	Throughout the Proposed Works periodic reviews will be undertaken to identify opportunities for GHG emissions reduction and enable the introduction of carbon reducing measures at relevant stages in the decommissioning process.
Chapter 7: Climate Change	Preparations for Quiescence	Embodied GHG emissions	Embedded	Where possible: ▪ Choice of local sourcing of construction materials will be encouraged. ▪ Circular economy principles will be considered and deployed. ▪ Carbon reporting will be undertaken.

Aspect	Phases	Nature of impact	Type	Environmental Measure
Chapter 7: Climate Change	Preparations for Quiescence and Final Site Clearance	Release of GHG emissions from fuel and energy consumption.	Embedded	Fuel and energy consumption: Energy efficient and well-maintained plant equipment should be used, as should mains electricity, if available, rather than diesel-fuelled portable generators. This will include the use of a new electrical overlay (Decommissioning Site Incoming Electrical Supply (DSIES)), which will be provided as an alternative to the existing grid supply and be operational after cessation of the grid, to ensure suitable power supplies to sit for on-site distribution. This will reduce GHG emissions from fuel and energy consumption.
Chapter 7: Climate Change	Preparations for Quiescence and Final Site Clearance	Release of GHG emissions from deconstruction and construction traffic.	Good practice	There are GHG emissions from deconstruction and construction traffic. Deliveries and the transportation of waste will be consolidated where possible and there should be 'no idling' vehicles. Sustainable modes of travel for the construction workforce will be encouraged. This will reduce GHG emissions from construction traffic.
Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence and Final Site Clearance	Potential degradation of habitats and biodiversity conservation sites	Embedded	In advance of site works (including preparatory investigations/enabling works), information on the sensitive ecological features that are on/near the Site will be shared with the relevant working party to ensure appropriate precautionary working practices are developed and implemented. Inspection and routine monitoring will be carried out by an Ecologist (Clerk of Works), also referred to as 'ECoW', for planned and ongoing works as appropriate. Habitats (coast, woodland, grassland) within and immediately adjacent to the Works Area will continue to be managed in accordance with the IMS. Whilst tree loss to facilitate works is unlikely, any unavoidable tree loss will be limited and compensated through planting of a

Aspect	Phases	Nature of impact	Type	Environmental Measure
				replacement tree for each one that is removed within Hinkley LWS or bordering areas. Pollution risk and pollution controls will be managed in accordance with the IMS, which aligns to best practice guidance.
Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence and Final Site Clearance	Potential disturbance of mammals and other fauna (general measures)	Embedded	Baseline verification surveys will be undertaken, in accordance with best practice guidance, to provide further monitoring of legally protected species, and inform the EMP. If verification surveys identify the potential to impact on species not identified previously, additional surveys or measures may apply. Where practicable, within constraints associated with the Proposed Works, excavations are to be backfilled or covered and securely sealed or will have a means of escape for any entrapped fauna, for example gradually sloping sides, or ramps extending from the base of the excavation up to the ground surface. Where this is impracticable during the works, voids will be monitored, and any entrapment of fauna will be reported to the ECoW who will recommend additional working practices as appropriate. Gates to compound areas are to be designed to prevent mammals from gaining access and would be closed at night. Any temporarily exposed pipes would be capped when contractors are off site to prevent mammals from gaining access. Construction/demolition materials are to be stored in predetermined parts of the Works Area, over 30 m from adjacent habitats and wherever practicable elevated off the ground (e.g. on pallets), or stored within skips prior to their removal, unless otherwise agreed by the ECoW. Storage and handling of materials should minimise the risk of creating refuge for, or harming, mammals and other fauna.

Aspect	Phases	Nature of impact	Type	Environmental Measure
				As far as practicable, any areas/mounds of spoil and/or earth are to be fully compacted, removing cracks/crevices that could create wildlife refuges. No litter or waste materials are to be discarded in works areas as they could create temporary refuges for wildlife. All personnel/contractors are to remain vigilant and aware of the risk of encountering mammals, for example otter, badger and hedgehog , when driving to and from the Site. A low maximum speed limit will be implemented within the Works Area, in accordance HPB's established safety procedures relating to vehicle movements. Statutory speed limits will be adhered to on approach to the Works Area via surrounding routes. This will limit the risk of animal mortality due to traffic collisions. In the event personnel/contractors observe a protected species (e.g. otter, badger, bat, nesting bird etc), or suspect such species to be present within or adjacent to works areas, all work shall cease and the advice of the ECoW will be sought immediately. In advance of site works (including preparatory investigations/enabling works), the ECoW will brief the Principal Contractor on the sensitive ecological features that are on/near the Site and the Principal Contractor will ensure all site staff/personnel are aware of the precautionary working practices set out in the EMP.
Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence and Final Site Clearance	Potential disturbance of Otter	Embedded	In advance of demolition activities, surveys of the work areas and in the vicinity will be carried out by qualified specialist as appropriate and in accordance with the IMS. In the event otter is recorded, appropriate method of work and mitigation will be developed and implemented in accordance with the advice from the qualified specialist.

Aspect	Phases	Nature of impact	Type	Environmental Measure
Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence and Final Site Clearance	Potential disturbance of bats	Embedded	Prior to demolition or modification of built structures (typically in the spring/summer period prior to demolition), preliminary roost assessment and any follow-up surveys that are necessary will be carried out by qualified specialist in accordance with best practice guidance (as set out in the IMS). In the event a bat roost is discovered it will be removed under an EPS licence to ensure compliance with the legal protection of bats and an appropriate method of work and mitigation implemented.
Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence and Final Site Clearance	Potential disturbance of bats	Embedded	Wherever practicable within the constraints of site security and safety requirements, the lighting scheme employed throughout the Proposed Works will minimise light trespass onto adjacent habitat and is to be designed based on good practice principles (Bat Conservation Trust & Institute of Lighting professionals 2023[8]).
Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence and Final Site Clearance	Potential disturbance of badger	Embedded	In advance of demolition activities, surveys of the work areas and in the vicinity will be carried out by qualified specialist in accordance with best practice guidance (managed through the implementation of the IMS). In the event badger is recorded, appropriate method of work and mitigation will be developed and implemented in accordance with best practice guidance..
Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence and Final Site Clearance	Potential disturbance of hedgehog	Embedded	Any hedgehog encountered during the Proposed Works will be removed from the Works Area and released into suitable habitat that will remain undisturbed.

[8] Bat Conservation Trust (BCT) & Institute of Lighting Professionals (2023). Guidance Note GN08/23: Bats and Artificial Lighting at Night. Institute of Lighting Professionals, Rugby, Warwickshire.

Aspect	Phases	Nature of impact	Type	Environmental Measure
Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence and Final Site Clearance	Spreading of non-native species	Embedded	In advance of demolition activities, surveys of the work areas and in the vicinity will be carried out by qualified specialist as appropriate and in accordance with the IMS. In the event invasive non-native species (INNS) is recorded, appropriate method of work and mitigation will be developed and implemented in accordance with the advice from the qualified specialist and best practice.
Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence and Final Site Clearance	Potential disturbance to reptiles	Embedded	In the event habitat disturbance at the edges of the Works Area is unavoidable, the area of disturbance will be kept to the practicable minimum and additional precautions are to be implemented in accordance with the advice from the qualified specialist and best practice..
Chapter 8: Terrestrial Biodiversity and Ornithology and Chapter 9: Marine Biodiversity	Preparations for Quiescence and Final Site Clearance	Potential disturbance to birds	Embedded	Marine works will be avoided between July and September to minimise impacts on Shelduck.
Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence and Final Site Clearance	Potential disturbance to birds	Embedded	In circumstances where work on buildings or disturbance of vegetation during the breeding season is unavoidable, a breeding bird and nest check will be carried out in advance by a qualified specialist as appropriate and in accordance with best practice guidance (managed through the implementation of the IMS). In the case of any active nests are discovered, an exclusion (no disturbance) zone will be confirmed by the qualified specialist until the young birds fledge. In the event disturbance, damage or destruction of a bird's nest is unavoidable this will take place under a Natural England licence to ensure compliance with the legal protection of breeding birds. If a birds' nest is encountered, all works that could directly affect the nest to cease as soon as it is safe to do so.

Aspect	Phases	Nature of impact	Type	Environmental Measure
				Disturbance of the nest is to be avoided until a qualified specialist has inspected the area and define appropriate measures as required.
Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence and Final Site Clearance	Biodiversity management	Embedded	Upon transfer to Nuclear Restoration Services (NRS), the Site will come under the responsibility of the NRS Sustainability Strategy.
Chapter 9: Marine Biodiversity	Preparations for Quiescence	Potential disturbance of marine environment, water quality and secondary effects on marine biota due to accidental spillage	Embedded	Pollution risk and pollution controls will be managed in accordance with the IMS, which aligns to best practice guidance.
Chapter 9: Marine Biodiversity	Preparations for Quiescence	Disturbance of marine mammals and other fauna and deterioration of flora	Embedded	The use of conventional methods: The deck and surrounding piles of the cooling water intake structure will be removed using conventional methods, and not using explosives, which may include use of (for example) diamond-wire cutting machines, vibro-piling to remove piles from the seabed, presence of jack-up vessels/ floating cranes/ guard vessels during the Proposed Works.
Chapter 9: Marine Biodiversity	Preparations for Quiescence	Disturbance to marine environment, water quality and secondary effects on marine biota	Embedded	Adherence to standard pollution control measures: All vessels and plant involved in the Proposed Works would be required to adhere to standard pollution control measures, such as those established under the International Convention for the Prevention of Pollution from Ships (MARPOL) and the Ballast Water Convention.
Chapter 9: Marine Biodiversity	Preparations for Quiescence	Potential disturbance to benthic habitats and	Embedded	Natural infill with marine sediments: Voids within the seabed beyond the intertidal area will not be plugged, instead, they will

Aspect	Phases	Nature of impact	Type	Environmental Measure
		secondary effects on biota and water quality.		be left to infill naturally with marine sediments minimising further disturbance to the marine environment.
Chapter 9: Marine Biodiversity Chapter 10: Coastal Management and Water Quality	Preparations for Quiescence	Deterioration of water quality	Embedded	Minimise the use of anti-fouling materials to reduce the amount of harmful chemicals / biocides released into the environment.
Chapter 9: Marine Biodiversity Chapter 10: Coastal Management and Water Quality	Preparations for Quiescence	Disturbance of marine mammals and other fauna and deterioration of flora	Embedded	Minimising subtidal working: As much work as possible will be carried out from the shore, including work in the inter-tidal zone, where working 'in the dry' will minimise sediment mobilisation and facilitate avoidance of disturbance of sensitive features.
Chapter 10: Coastal Management and Water Quality	Preparations for Quiescence	Deterioration of water quality	Embedded	The use of methods which minimise mobilisation of sediments: The intake structure will be removed to the seabed level. There will be no use of explosives. Works relating to the Cooling Water (CW) outfall, the Active Effluent Discharge Line (AEDL) and the sewage treatment discharge line will be carried out by land-based plant working above the level of the tide, as far as possible. These approaches will minimise sediment mobilisation arising from works during the Preparations for Quiescence phase.
Chapter 10: Coastal Management and Water Quality	Preparations for Quiescence	Accidental Spillage of harmful materials adaption measures	Embedded	Inventories of harmful materials present at any one time in the marine environment will be minimised, consistent with operational safety requirements. Pollution risk and pollution controls will be managed in accordance with the IMS, which aligns to best practice guidance.

Aspect	Phases	Nature of impact	Type	Environmental Measure
Chapter 11: Surface Water and Flood Risk	Preparations for Quiescence, Quiescence and Final Site Clearance	Coastal Protection and Flood Risk Adaptation Measures	Embedded	The existing coastal flood defences are currently designed to protect the operational HPB power station, and they will continue to protect the Site during the Proposed Works (taking into account current climate change allowances). Relevant sea defences will be maintained as appropriate (currently managed by EDF and NRS for HPB/HPC and HPA respectively).
Chapter 11: Surface Water and Flood Risk	Preparations for Quiescence, Quiescence and Final Site Clearance	Coastal Protection and Flood Risk Adaptation Measures	Embedded	An Emergency Flood Response Plan will be prepared, updated and incorporated as part of the Site Emergency Plan.
Chapter 10: Coastal Management and Water Quality Chapter 11: Surface Water and Flood Risk Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and Final Site Clearance	Surface water flooding	Embedded	Where the Proposed Works have the potential to affect site drainage inputs or change the permeability of the ground surface, the suitability of existing drainage systems, and potential requirement for alternative drainage arrangements or repairs, will be assessed. Suitable drainage systems defined in a decommissioning drainage plan prior to the relevant proposed activity commencing.
Chapter 11: Surface Water and Flood Risk	Preparations for Quiescence, Quiescence and Final Site Clearance	Surface water contamination	Embedded	Site runoff will be managed within the Works Area, with turbid water from the demolition zone collected and treated appropriately. This will include settlement and discharge to the existing site drainage system, or potentially off-site disposal depending on contamination levels. Wheel washes will be used to avoid silt loads being spread away from the Works Area by vehicles. The existing drainage system includes elements to capture and treat contaminates. Measures will consider changes to the Site drainage inputs due to the Proposed Works, such as changes to water quality /

Aspect	Phases	Nature of impact	Type	Environmental Measure
				quantity / contaminants, and potential for silty runoff / contaminant runoff / leaching from stockpiled materials. The potential for dewatering to be required will also be considered in advance of excavation work, and if dewatering is anticipated to be needed, an assessment will be carried out in advance to identify suitable environmental measures to minimise the potential for contaminant mobilisation and to protect the water environment and ensure compliance with water environment legislation. No non-consented discharge is anticipated to be discharged into the rhynes to the south and east of the Site, all water will be discharged to the Severn Estuary.
Chapter 11: Surface Water and Flood Risk Chapter 12: Soils, Geology and Hydrogeology Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence, Quiescence and Final Site Clearance	Surface water and groundwater contamination	Embedded	Pollution risk and pollution controls will be managed in accordance with the IMS, which aligns to best practice guidance.
Chapter 11: Surface Water and Flood Risk Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and Final Site Clearance	Surface water and groundwater contamination	Embedded	Implementation of the Site Protection and Monitoring Programme (SPMP) and appropriate groundwater monitoring and management regime will continue in accordance with the IMS, in line with best practice guidance. The scope of the SPMP monitoring will be routinely reviewed and any necessary changes implemented e.g., in response to changes to operations covered under the Permit or observed / suspected changes in site condition. If the SPMP monitoring indicates a deterioration in groundwater quality, appropriate measures will be undertaken to investigate, and if necessary, appropriate measures will be undertaken. The same principles will apply to monitoring wells used to

Aspect	Phases	Nature of impact	Type	Environmental Measure
				collect samples for radiological (and other non-radiological) testing.
Chapter 11: Surface Water and Flood Risk Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and Final Site Clearance	Ground, surface water and groundwater contamination	Embedded	Management of land condition data and monitoring will continue in accordance with the IMS, in line with best practice guidance. The monitoring scope, testing suites, and locations of monitoring points will be routinely reviewed so that necessary changes can be implemented e.g., in response to changes to operations covered under the Permit or observed / suspected changes in site condition. If monitoring indicates a deterioration in groundwater quality or surface water quality, appropriate measures will be undertaken to investigate, and if necessary, appropriate measures will be undertaken, prior to Permit Surrender. Records will continue to be kept of all associated monitoring, investigations, and remediation.
Chapter 11: Surface Water and Flood Risk	Preparations for Quiescence, Quiescence and Final Site Clearance	Flood risk	Embedded	Safestore: Finished floor levels will be above the design flood level (including allowances for climate change and freeboard where applicable) or by use of resistance or resilience mitigation measures. ▪ If design flood depths are predicted to be more than 0.6 m deep, the structural impact due to hydrostatic pressure on the building needs to be considered. ▪ Resistance measures aim to keep flood water out of a building e.g. by the use of permanent or temporary flood barriers across openings / floodwater entry points. ▪ Resilience measures, on the other hand, allow water to enter or pass through buildings with minimal impact and

Aspect	Phases	Nature of impact	Type	Environmental Measure
				may be more appropriate to mitigate deeper flood waters and / or less vulnerable development. ▪ The Safestore structure will be designed to be robust, weatherproof and secure against water intrusion up to an assumed external flood depth (from surface water or tidal overtopping) of 0.3 m for the duration of its life. Flood mitigation measures will be built into the design of the Proposed Works and incorporated into the Safety Case for HPB. ▪ The Safestore will need to be protected throughout the Quiescence and Final Site Clearance phases (i.e. to 2120 or the date of its demolition if earlier).
Chapter 11: Surface Water and Flood Risk	Preparations for Quiescence, Quiescence and Final Site Clearance	Flood risk	Embedded	The OWPF and DWPF be protected throughout their potential 13-year design life and are expected to be dismantled before the end of the Preparations for Quiescence phase (i.e. by 2039). Measures will include the following: Structures will be built with Finished Flood Levels (FFL) of 0.3 m above the surrounding ground levels, allowing some protection from surface water flooding and tidal flooding.
Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and Final Site Clearance	Ground, surface water and groundwater contamination	Embedded	Compliance with Nuclear Site Licence conditions and Environmental Permitting (England and Wales) Regulations 2016.
Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and	Ground, surface water and groundwater contamination	Embedded	Continual management of land condition data in accordance with the IMS, in line with best practice guidance. This includes the implementation of appropriate waste management plans

Aspect	Phases	Nature of impact	Type	Environmental Measure
	Final Site Clearance			and site-wide environmental safety case (SWESC) during the Proposed Works (except for areas of the Site where specific requirements for the assessment of site condition apply). Assessments, and industry guidance for ground investigation and land contamination assessment (such as published by CL: AIRE, the Environment Agency) will inform the design of investigations, environmental monitoring, and ground works to achieve the Site reference state, and to validate its achievement. This characterisation work will consider potential legacy radioactive and non-radioactive contamination associated with the historical use of the Site as well as the current status. Groundwater risk assessment to inform site characterisation will be undertaken in accordance with Environment Agency guidance.
Chapter 12: Soils, Geology and Hydrogeology Chapter 7: Climate Change	Preparations for Quiescence, Quiescence and Final Site Clearance	Ground, surface water and groundwater contamination	Embedded	Implementation of the Site Protection and Monitoring Programme (SPMP) and appropriate groundwater monitoring and management regime will continue in accordance with the IMS, in accordance with best practice. If wells cannot be retained for ongoing environmental monitoring purposes, or are no longer required, these will be decommissioned in accordance with Environment Agency guidance for decommissioning redundant boreholes and wells. Wells that become unexpectedly damaged or unusable will be subject to assessment to confirm whether they need to be replaced.
Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and Final Site Clearance	Ground, surface water and groundwater contamination	Embedded	Continual management of land condition data in accordance with the IMS. Site characterisation work undertaken during the Proposed Works will be added to this system to keep records of the land quality on the Site.

Aspect	Phases	Nature of impact	Type	Environmental Measure
Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and Final Site Clearance	Ground, surface water and groundwater contamination	Embedded	In accordance with IMS, consideration will be given to climate change effects in land contamination risk assessments completed during the Proposed Works.
Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and Final Site Clearance	Ground, surface water and groundwater contamination	Embedded	During the Proposed Works, construction strategies will be implemented that will seek to maximise the reuse of excavated materials or demolition derived materials that are suitable for the intended re-use in the context of the future site use. Waste management planning and reuse of material will be completed in accordance with the Definition of Waste Code of Practice (DoWCoP), use of a Materials Management Plan (MMP) (as relevant) and appropriate waste management plan. These will set out how stockpiles will be managed and segregated to avoid cross-contamination and will include the anticipated programme for storage of materials. Where it is identified that materials cannot be re-used on the Works Area or on the Site, these will be suitably contained to prevent uncontrolled releases to the environment, and an off-site disposal option at a suitably licensed facility by a licensed waste carrier will be identified and collection arranged at the earliest opportunity.
Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and Final Site Clearance	Ground, surface water and groundwater contamination	Embedded	Decommissioning plans for the Proposed Works will reflect that delicensing of the Nuclear Site Licence and surrender of the existing Radioactive Substance Regulation permit are distinct regulatory processes with different requirements. Specifically, the plans will note that the programme of validation monitoring required to demonstrate that the Site reference state has been achieved may differ from the clearance survey required for delicensing. The Site end state description will continue to be clarified as the plans are developed during the Proposed Works, and the plans updated as and when required.

Aspect	Phases	Nature of impact	Type	Environmental Measure
Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and Final Site Clearance	Contamination risk to human health	Embedded	All aspects of the Proposed Works will be in accordance with the Health and Safety at Work etc Act (1974) and regulations made under the Act, and the Construction (Design and Management) Regulations 2015. Potential risks to human health from any unexpected ground contamination will be avoided by the use of PPE and by adopting appropriate working practices. These could include the use of field monitoring equipment if potential for vapours is anticipated, to minimise potential for personnel to come into direct contact with contaminants, and protocols for suspect materials encountered during groundworks to be characterised through sampling and testing to identify appropriate further actions.
Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and Final Site Clearance	Contamination risk to human health Ground, surface water and groundwater contamination	Embedded	Asbestos and asbestos containing materials will be managed in according with the IMS, aligned to legal requirements (Control of Asbestos Regulations 2012 (CAR 2012))
Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and Final Site Clearance	Ground, surface water and groundwater contamination	Embedded	The potential for dewatering to be required during all stages of the Proposed Works will be considered in advance of excavation activities, and if dewatering is anticipated to be needed, an assessment will be carried out in advance to identify suitable environmental measures to minimise the potential for contaminant mobilisation and to protect the water environment and ensure compliance with water environment legislation. This will include consideration of potential effects on the flow of groundwater from the Works Area towards the groundwater dependent terrestrial ecosystem (GWDTE) within Bridgwater Bay SSSI) on farmland at Wick, to determine whether additional mitigation measures are needed to avoid / limit impacts on the GWDTE. The licensee will ensure compliance with the Environment Agency for water abstraction.

Aspect	Phases	Nature of impact	Type	Environmental Measure
				Consideration of effects on the GWDTE will include consideration of ecological survey data and may require groundwater modelling inputs.
Chapter 12: Soils, Geology and Hydrogeology	Preparations for Quiescence, Quiescence and Final Site Clearance	Groundwater monitoring	Good practice	Design and construction of new groundwater monitoring wells for site characterisation or other environmental purposes will be in accordance with industry guidance such as Environment Agency Science Report SCO20093, and BS 10175, to avoid the creation of new preferential migration pathways.
Chapter 13: Historic Environment	Preparations for Quiescence	Loss of historic assets	Embedded	A written scheme of investigation for building recording is to be developed as appropriate
Chapter 13: Historic Environment	Preparations for Quiescence	Loss of / disturbance of historic assets	Embedded	A Protocol for Archaeological Discovery (PAD) is to be in place during the Proposed Works in the marine environment, to set out the approach to the reporting and subsequent treatment of unexpected archaeological discoveries.
Chapter 14: Landscape and Visual Impact Assessment	Preparations for Quiescence, Quiescence, and Final Site Clearance	Deterioration of landscape character and visual amenity	Embedded	The Safestore would be clad in the colour similar to "goosewing grey". The woodland belts which sit outside of the Works Area but inside of the Site would be retained to allow for its continued screening, and this will also form part of the 'EIA Baseline' for decommissioning at the Site.
Chapter 15: Noise and Vibration	Preparations for Quiescence	Disturbance to residents arising from noisy works	Embedded	The noise emissions from the operation of the Operational and Decommissioning Waste Processing Facilities will be managed and controlled through the implementation of appropriate operational noise management controls.
Chapter 15: Noise and Vibration	Preparations for Quiescence	Disturbance to residents arising from noisy works	Embedded	Undertake appropriate noise monitoring programme at the boundary of the Work Areas during the greatest intensity of simultaneous work

Aspect	Phases	Nature of impact	Type	Environmental Measure
Chapter 15: Noise and Vibration	Preparations for Quiescence	Disturbance to residents arising from noisy works	Embedded	In the event of receipt of a complaint relating to noise from the Proposed Works, investigation will be carried out with appropriate control measure be applied as required. Additional mitigation measures may be specified where monitoring demonstrates that noise from the works may be giving rise to significant impacts.
Chapter 15: Noise and Vibration and Chapter 8: Terrestrial Biodiversity and Ornithology	Preparations for Quiescence and Final Site Clearance	Disturbance to residents arising from noisy works Disturbance to mammals, birds, bats and other fauna	Good practice	Undertaking the Proposed Works in accordance with good practice. All noisy activities to be undertaken within hours for noisy activities for construction provided by Somerset Council, except where works need to be undertaken continuously (e.g. for any concrete pours that may be required) or in case of emergencies. Where the potential for significant effects arises, applying methods, considered to be best practice, in accordance with the recommendations in BS 5228:1-2009+A1:201413, the approved code of practice for construction noise.
Chapter 16: Traffic and Transport	Preparations for Quiescence and Final Site Clearance	Construction Traffic	Embedded	Appropriate Construction Traffic Management Plan(s) will be produced for the demolition activities that form part of the Proposed Works.
Chapter 17: People and Communities	Preparations for Quiescence	Potential impacts on HPB Workers	Embedded	The following measures will continue as part of the resource planning for decommissioning: ▪ Undertake career aspirational discussions with staff; ▪ Offer contractual redundancy schedules; ▪ Assist workers with necessary retraining to facilitate suitability for decommissioning at HPB roles or alternative roles within the Applicant organisation;

Aspect	Phases	Nature of impact	Type	Environmental Measure
				▪ Work with third parties to advertise new opportunities for staff; and ▪ Continue to support staff with post-employment references for alternative posts.
Chapter 17: People and Communities	Preparations for Quiescence	Potential impacts on HPB Workers	Embedded	The NDA and NRS operate socio-economic programmes at each of their sites.
Chapter 18: Conventional Waste	Preparations for Quiescence and Final Site Clearance	Waste generation	Embedded	Waste management will continue to be managed in accordance with the IMS. Appropriate waste management plan will be produced for the demolition activities that form part of the Proposed Works.
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence, Quiescence, and Final Site Clearance	Risk of major accidents and disasters	Embedded	The Major Accident Prevention Policy (MAPP) or similar and the Incident Management Plan will be maintained to an appropriate standard by the Site Licensee, in accordance with the IMS, for the full duration of the Proposed Works.
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence, Quiescence, and Final Site Clearance	Risk of major accidents and disasters	Embedded	Management of security will be managed in accordance with the IMS and the Nuclear Site Security Plan.
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence, Quiescence, and Final Site Clearance	Risk of major accidents and disasters	Embedded	Appointment and management of contractors will be managed in accordance with the IMS, to ensure compliance with all regulatory requirements.

Aspect	Phases	Nature of impact	Type	Environmental Measure
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence, Quiescence, and Final Site Clearance	Risk of major accidents and disasters	Embedded	The Site Licensee will adapt the current arrangement systems and processes in place for the avoidance, prevention, control and mitigation of major accidents and disasters from the operational site conditions in respect of the Proposed Works and revise these as necessary for the duration of the Proposed Works.
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence, Quiescence, and Final Site Clearance	Risk of major accidents and disasters	Embedded	The decommissioning of the surface water drainage, bunding and containment, and any other safeguards will be assessed against the ongoing risk of major accidents, and the residual risk will be maintained at a level that is ALARP, throughout the duration of the Proposed Works.
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence, Quiescence, and Final Site Clearance	Risk from releases of hazardous materials	Embedded	Incident management plan will be managed in accordance with the IMS
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence, Quiescence, and Final Site Clearance	Risk of major accidents and disasters	Embedded	Work management and risk assessment will be managed in accordance with the IMS, which ensures hazardous works are undertaken by appropriately Suitably Qualified Experienced Personnel (SQEP) and trained operators
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence, Quiescence and Final Site Clearance	Risk of major accidents and disasters	Good practice	In compliance with CDM regulations, structural surveys will be undertaken before commencement of dismantling operations.
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence,	Risk of major accidents and disasters	Good practice	The design standard of built structures enables the structures to withstand external loads, such as wind or precipitation and

Aspect	Phases	Nature of impact	Type	Environmental Measure
	Quiescence and Final Site Clearance			will be maintained up to the point of decommissioning that structure, considering any foreseeable changes to design loads.
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence, Quiescence and Final Site Clearance	Risk of major accidents and disasters	Good practice	Emergency response procedures will consider the potential for significant weather events or other natural hazards and will define the actions to be taken to minimize the risk arising from these events.
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence, Quiescence and Final Site Clearance	Risk of major accidents and disasters	Good practice	The Site Licensee will provide access to reliable meteorological forecasting services to inform work planning and controls to prevent undertaking works in inappropriate conditions such as heavy crane lifts in high winds.
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence, Quiescence and Final Site Clearance	Risk of major accidents and disasters	Good practice	The Site Licensee will review all planning applications in the vicinity of the Proposed Works and provide representation / objection to any proposed development which would lead to a significant increase in risk at the Works Area as appropriate.
Chapter 19: Major Accidents and Disasters	Preparations for Quiescence, Quiescence and Final Site Clearance	Risk of major accidents and disasters to other businesses	Good practice	Stakeholder communication and management will be managed through existing arrangement e.g. SSG to identify any potential hazards which arise over the course of the Proposed Works.

6 Implementation of the Environmental Management Plan

6.1 Overview

6.1.1. It will become a requirement of the conditions attached to the EIADR consent to implement the embedded design and good practice site management measures and describe their effectiveness. This section of the Outline EMP identifies how the measures identified in **Section 5** could be incorporated into site working practices, and how the effectiveness of these measures could be assessed.

6.2 Process for implementation of mitigation measures

6.2.1. The Proposed Works will be carried out in accordance with the measures set out in the formal EMP submitted for approval to ONR after the approval of the EIADR.

6.2.2. Decommissioning projects and modifications to plant will be assessed to ensure compliance with EIADR as part of the engineering change process. EIADR compliance will be managed in line with the process outlined in **Appendix 5C: EIADR compliance summary** of the ES.

6.2.3. In addition, there are a number of other tools to ensure that all environmental impacts will be minimised. The Site has an Integrated Management System which covers the requirements of ISO 9001 (Quality Assurance), ISO 14001 (Environmental Management Systems) and OHSAS 18001 (Occupational Health and Safety Management System). Where there is the potential for an activity to produce significant discharges or disposals, either radioactive or non-radioactive, the Site will undertake Best Available Techniques (BAT) studies to demonstrate that impacts are minimised.

6.3 Process for determining effectiveness of mitigation measures

6.3.1. The Site will continually monitor the effectiveness of measures to prevent and reduce effects over time. Where measures are not sufficiently effective, they will be reviewed and amended as necessary to ensure success in minimising significant adverse environmental effects. A key part of this process is the close interaction between the Project and Environment Professionals, ensuring that measures will be considered, applied and, where relevant, reviewed throughout the lifespan of the Proposed Works. The effectiveness of the measures will be monitored in a variety of ways including:

- Environmental performance monitoring:
  - The Site Licensee will establish a programme of environmental performance monitoring on the basis of requirements identified within **Section 4** and **Section 6** of this Outline EMP;
  - This monitoring will allow an assessment of environmental impacts post implementation of environmental measures (and their effectiveness) in addition to being of use for determining evolving baseline conditions.
  - The need for this form of monitoring is determined on an individual basis based on the anticipated activities and the potential for significant adverse impacts.
- Visual Evidence:
  - Inspections of the project work area both prior to, during and after project works will be used to assess the requirements for mitigation, on-going suitability of the mitigations and overall success in minimising significant adverse impacts.

- Where it is deemed appropriate, photographic evidence can be gathered to support the assessment of effectiveness.
- Routine Site tours by suitably qualified individuals are used to identify areas of success and areas for improvement. These tours are used to monitor the effectiveness of mitigations on environmental receptors.

- Review of regulatory action, complaints and internal event reporting:
  - Regulatory actions, complaints and internal events including near misses will be reported and investigated.
  - Such investigations may provide recommendations for improvements where mitigation measures have not been effective or where further mitigations will be required.

6.3.2. Further detail is provided in **Section 6** of this Outline EMP, including details of the likely monitoring requirements.

7 Monitoring the effectiveness of environmental requirements

7.1 Monitoring

7.1.1. Scheduled monitoring or environmental performance and formal compliance auditing will be undertaken throughout the Proposed Works

7.1.2. This will enable the overall effectiveness of established environmental measures, and compliance procedures, to be assessed and allow for corrective actions to be taken to strengthen environmental safeguards or improve outcomes as required.

7.1.3. Whilst monitoring requirements will be adaptable depending on the scope of works at any given time, specific monitoring requirements as identified in the ES are presented in **Table 5-1** above.

7.1.4. A designated Environmental Site Officer will manage the monitoring process on-site who will be present on Site throughout the Preparations for Quiescence and Final Site Clearance phases.

7.1.5. The Environmental Site Officer will observe site activities and report notable deviations from the formal EMP, along with the action taken and general conditions at the time. The Environmental Site Officer would also be the point of contact with the relevant environmental bodies.

7.1.6. The Project Manager will arrange regular formal inspections to ensure the requirements of the formal EMP are being met. After completion of the works, the Environmental Site Officer will conduct a final review.

7.2 Records

7.2.1. The Environmental Site Officer will retain records of environmental monitoring and implementation of the formal EMP. This will allow provision of evidence that the formal EMP is being implemented effectively for future updates of the document.

7.2.2. These records will include:

- Register and schedule of environmental actions;
- Licences, permits and approvals;
- Results of inspections by Project Manager/ Environmental Site Officer; and
- Other environmental surveys and investigations.

8 Stakeholder engagement and community relations

8.1.1. The Site Licensee will continue to be committed to engaging with stakeholders at all phases in the decommissioning process, focusing on those who may be affected by the decommissioning works. The Site Licensee will develop and implement a stakeholder communications plan that includes community engagement before works that may cause disturbance, commence in the Works Area. This will include the appointment of a site contact to whom complaints and queries about the works can be directed. Any complaints will be investigated, and action taken where appropriate.

8.1.2. In addition, the existing quarterly Site Stakeholder Group (SSG) meetings will continue to be utilised to provide an update on current site activities throughout the Preparations for Quiescence phase.

9 Review and update to Environmental Management Plan

9.1.1. Regular reviews[9] of the EMP will be undertaken and an updated EMP submitted to ONR. Updates will include:

- A record of environmental measures implemented to date;
- Description of any changes made to environmental measures, giving reasons for such changes;
- Description of the effectiveness of implemented environmental measures, including how the measures were assessed, monitored and recorded; and
- A summary of any updates to Environmental Impact Assessment baseline. The updated EMP will highlight where there have been changes in the baseline environment and summarise environmental measures required or corrective action to be taken to reduce or prevent significant environmental effects not outlined within the ES.

9.1.2. The formal EMP will also be subject to further updates should there be a formal change or extension of the decommissioning consent under Regulation 13 of the EIADR.

[9] These reviews will be undertaken on a pre-determined timeframe agreed with the ONR in respect of the phase and activities of work being progressed.

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