



EDF Energy Nuclear Generation Ltd

Decommissioning of Hinkley Point B Nuclear Power Station

Environmental Statement

Volume IV Non-Technical Summary



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1 Introduction

1.1 Overview

- 1.1.1. EDF Energy Nuclear Generation Limited (EDF, also referred to as the ‘Applicant’) has prepared an Environmental Statement (ES) to support an application submitted to the Office for Nuclear Regulation (ONR) for approval to dismantle and decommission Hinkley Point B Nuclear Power Station (also referred to herein as HPB) under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (as amended)¹ (hereafter termed ‘EIADR’).
- 1.1.2. The works, referred to as the ‘Proposed Works’, include the dismantling and deconstruction of buildings and structures in areas within and outside the Nuclear Site Licence² boundary, that are part of the HPB power station.
- 1.1.3. This document is the non-technical summary of the ES and broadly follows the same structure as the main volume of the ES (Volume I) to enable the reader to locate additional detail, if required.
- 1.1.4. This non-technical summary has been provided in order to satisfy Regulation 5(1) of the EIADR.

1.2 What is decommissioning?

- 1.2.1. Nuclear decommissioning is the process leading to the complete or partial closure of a nuclear facility, including its nuclear reactor(s). The process is managed according to a decommissioning plan, which includes the whole or partial dismantling and decontamination of the facility, and restoration of the land to enable future use.
- 1.2.2. The objective of decommissioning is to ensure long-term protection of the public and the environment and reduce the levels of radioactive contamination in materials and facilities within the HPB Nuclear Site Licence Boundary (hereafter referred to as “the Site”), so that they can be safely recycled, reused, or disposed of as conventional or radioactive waste.
- 1.2.3. HPB ceased electricity generation in August 2022 after 46 years of operation and, as a result, the power station and associated infrastructure, and the land within the Nuclear Site Licence boundary (the ‘Site’) need to be decommissioned safely and in compliance with UK regulations. Currently, the power station is undergoing defueling, which is the activity of removing all the nuclear fuel from the Site, and an activity which falls outside of the scope of this EIADR application.

¹ UK Government (1999). Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (as amended) (Online) Available at: <https://www.legislation.gov.uk/uksi/1999/2892/contents/made> (Accessed August 2024).

² 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.

1.3 What are the roles of EDF, the Office for Nuclear Regulation (ONR) and the Nuclear Decommissioning Authority (NDA)?

- 1.3.1. EDF, the Applicant, is the current Licensee and holds the Nuclear Site Licence for HPB, granted under the Nuclear Installations Act 1965 (as amended). It is a condition of the Nuclear Site Licence, and a requirement pursuant to EIADR, that the applicant must apply to the regulator for the nuclear industry in the United Kingdom (the ONR), for approval to decommission HPB. This EIADR application includes the submission of an ES which reports the outcome of an Environmental Impact Assessment (EIA) of the Proposed Works.
- 1.3.2. Following the end of generation and the subsequent defueling of HPB, the Nuclear Decommissioning Authority (NDA) and Nuclear Restoration Services (NRS, formerly known as Magnox Ltd) (a subsidiary of the NDA) will become the party responsible for implementing decommissioning at HPB.

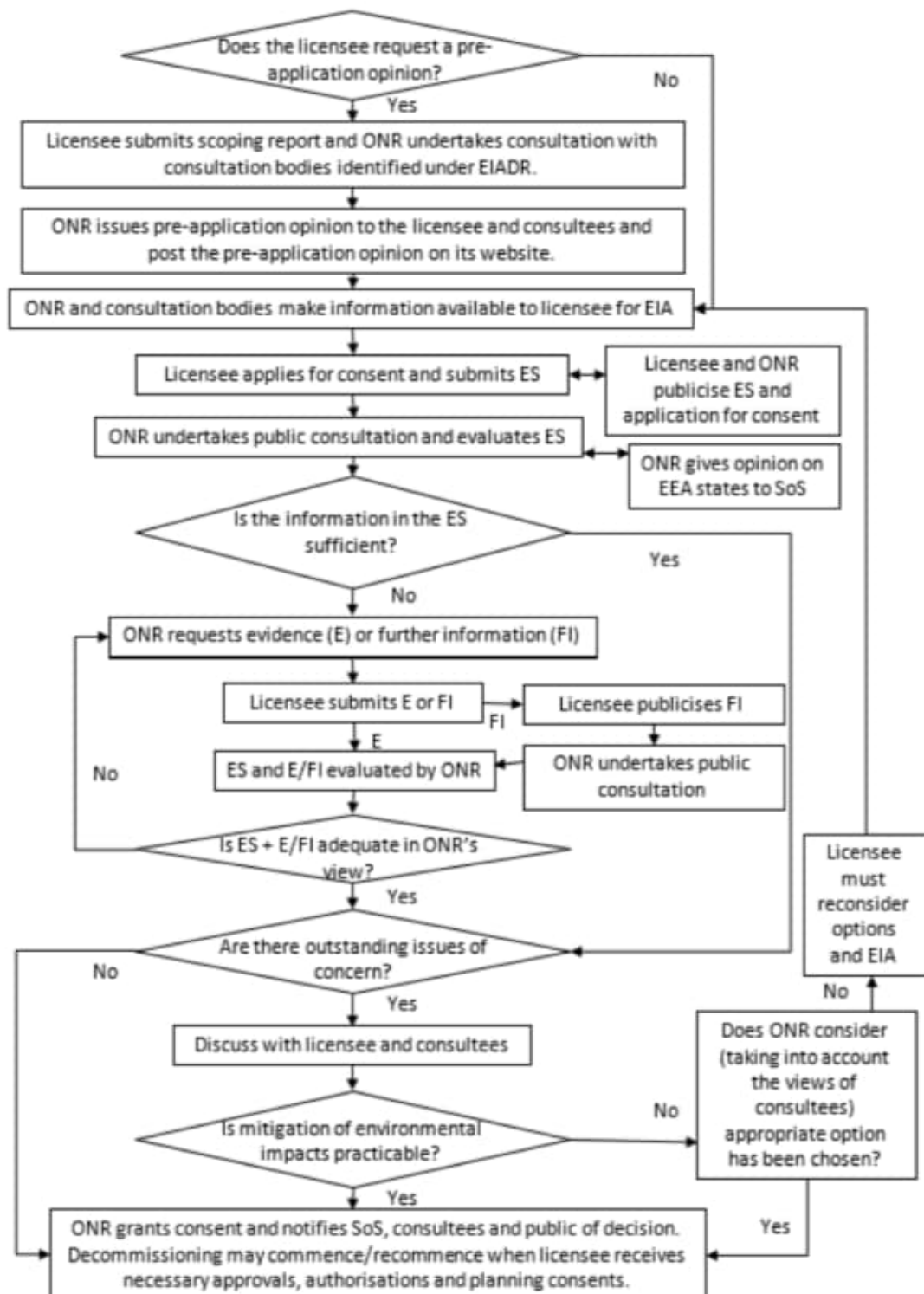
1.4 What is an Environmental Impact Assessment?

- 1.4.1. An EIA is an environmental assessment process to ensure that the approval of the Proposed Works by decision makers is made with knowledge of the likely significant environmental effects that may arise as a result of the Proposed Works.
- 1.4.2. The objective of the EIA is to identify any likely significant effects which may arise from the Proposed Works and identify measures to prevent, reduce or offset any significant adverse effects and to enhance any beneficial effects.
- 1.4.3. During the EIA process, opportunities and management measures are identified and incorporated within the proposals to prevent or reduce any adverse effects and to enable sustainable design and construction principles to be embedded within the proposals. The outcome of the EIA process is reported within the ES.
- 1.4.4. The ES comprises:
- Non-Technical Summary (NTS) – This document – which provides a standalone summary of the Proposed Works and the findings of the ES in non-technical language.
 - Volume I: ES Main Chapters – This presents the main body of the EIA, including the description of the Site and the Proposed Works; a review of reasonable alternatives; an outline of the EIA process; and the EIA itself which is divided into a number of environmental aspect chapters.
 - Volume II: ES Figures – Figures to illustrate the Proposed Works and any assumptions, or to support the environmental aspect chapters.
 - Volume III: ES Technical Appendices – Additional reports and survey data which provide further detail on the environmental aspect assessments undertaken and information used to inform the assessments presented in Volume I.

1.5 Consenting process

- 1.5.1. The nature of Proposed Works means that the Applicant is required to apply to the ONR (as the competent authority) for consent to carry the works out under the requirements of the EIADR. As illustrated in **Graphic 1-1**, once an application is submitted, the ONR will inspect and assesses the application documents to judge the suitability of the arrangements made and the adequacy of their implementation. It does this in part through consultation (over a minimum 90-day consultation period) with environmental bodies and other stakeholders. Under the EIADR, the ONR has the duty to assess the adequacy of an ES and determine if consent should be granted for the decommissioning project (in this case the Proposed Works).
- 1.5.2. If insufficient or inadequate evidence has been provided to enable a determination or decision to be made, the ONR can request further information. The ONR also has responsibility for determining whether an EIA is required for a proposed change or extension to a project which has already been previously given consent.

Graphic 1-1 - EIADR process flowchart

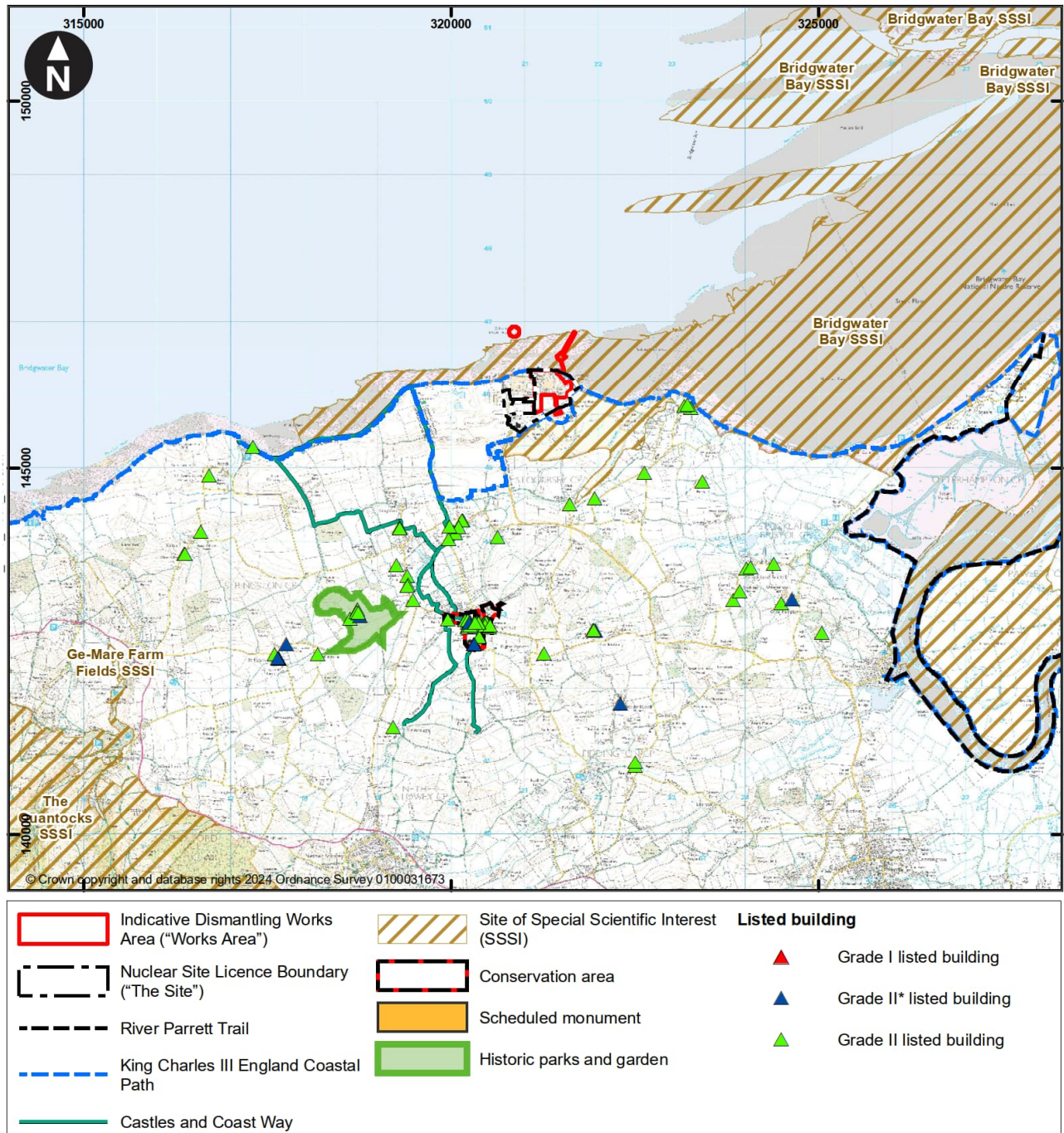


2 The Proposed Works

2.1 Hinkley Point B Nuclear Power Station and the surrounding environment

- 2.1.1. Hinkley Point B Nuclear Power Station is located on the north coast of Somerset on the shores of the Severn Estuary (see **Graphic 2-1**). It is approximately 12 km north-west of the largest local settlement, Bridgwater, and approximately 3 km from Wick, Burton, Shurton, Stogursey and Stolford and within the jurisdiction of Somerset Council.
- 2.1.2. It neighbours the Hinkley Point A Nuclear Power Station (HPA) which ceased electricity generation in 1999 and is currently being decommissioned. Immediately to the west of HPA is the Hinkley Point C New Nuclear Build Site. Collectively these sites are referred to as the Hinkley Point Complex. The Hinkley Point Complex is adjacent to the intertidal mudflats of Bridgwater Bay, to the north.
- 2.1.3. Land around both HPA and HPB has recreational and ecological value: the Site is adjacent to the Severn Estuary which holds multiple international environmental designations. The King Charles III Coastal Path is a nationally designated route which follows the coast to the north of the Site. This route is currently diverted due to ongoing works on HPC, however will be reinstated shortly following the start of generation at HPC. Immediately south of the Works Area is a Local Nature Reserve. This is currently managed by EDF for biodiversity enhancement.
- 2.1.4. A summary of the Site and Works Area, an overview of the Proposed Works and a description of how waste and materials will be managed is provided in the subsequent sections, with further details available provided in **Chapter 2: The Decommissioning Process** within **Volume I** of the **ES**.

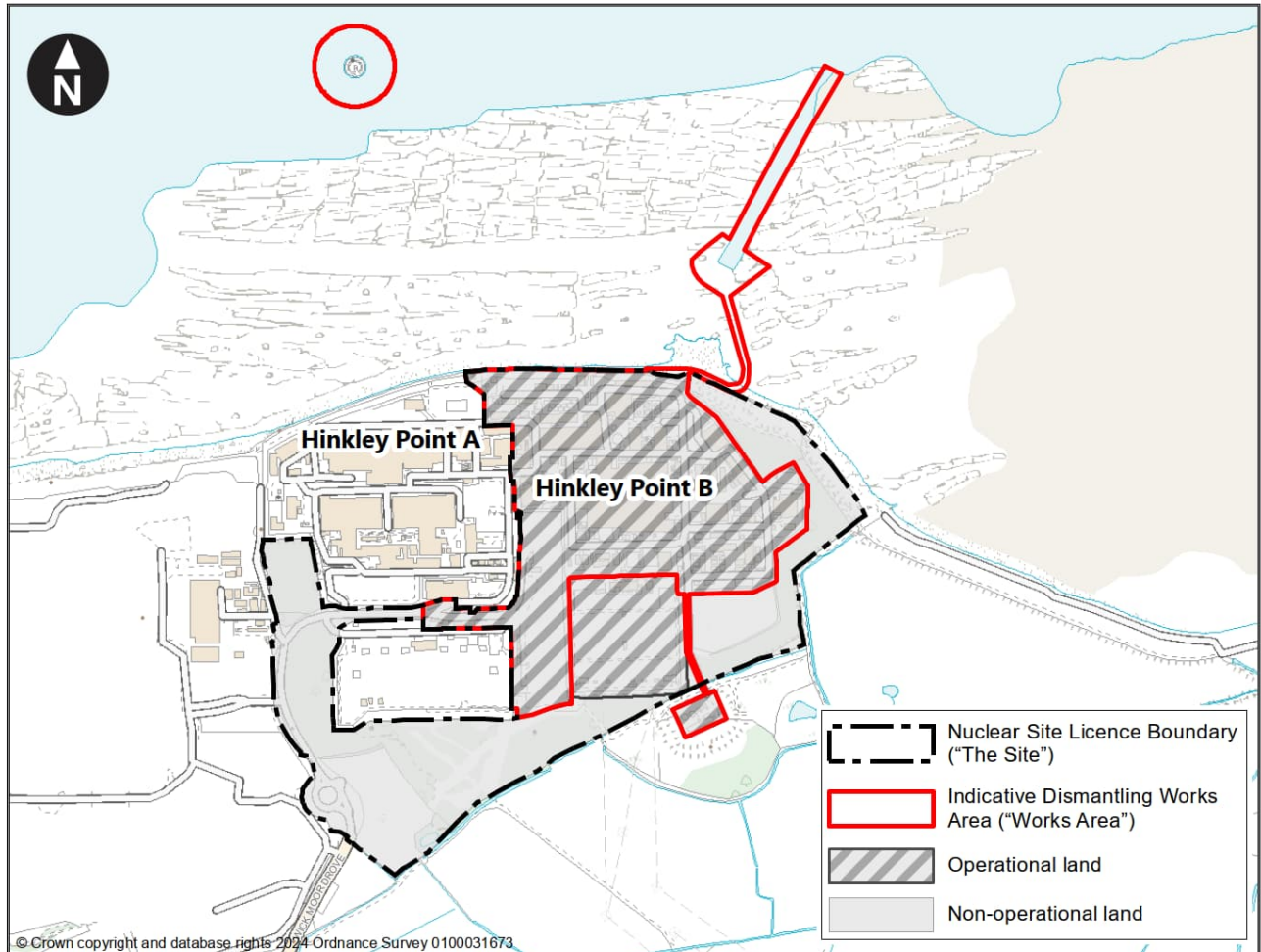
Graphic 2-1 - Environmental context surrounding Hinkley Point B Nuclear Power Station



2.2 The Site and Works Area

- 2.2.1. The Proposed Works involve the dismantling and decommissioning of HPB, in areas within and outside of the Site. An Indicative Dismantling Works Area (hereafter referred to as the 'Works Area') is illustrated in **Graphic 2-2** and has been used to inform the scope of assessment.

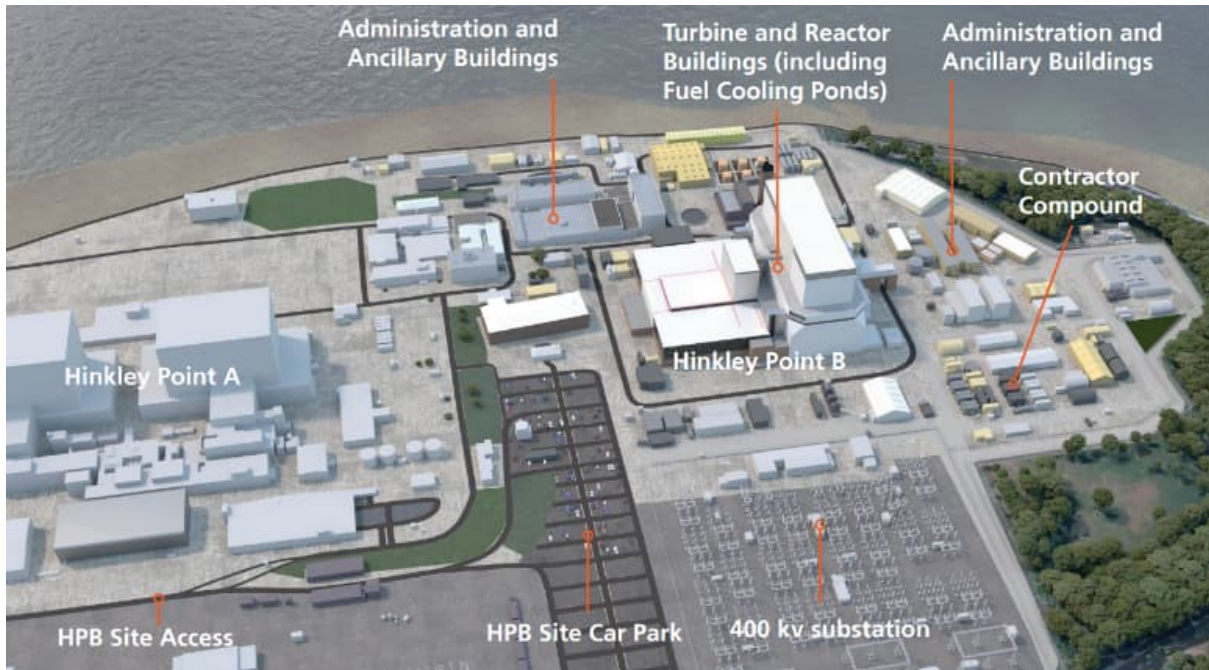
Graphic 2-2 - The Site and Works Area



- 2.2.2. A simple breakdown of the areas within the station is provided in **Graphic 2-2**. The Works Area is approximately 22.7 hectares (ha) and located within the administrative area of Somerset Council³.

³ Somerset Unitary Authority was created in April 2023 and replaces Somerset County Council. The new unitary council brings together the services previously provided by the four district councils in Somerset (Mendip, Sedgemoor, Somerset West and Taunton, and South Somerset) alongside the services formerly provided by Somerset County Council.

Graphic 2-3 - Locations of notable Site areas



2.2.3. Two routes provide primary access for vehicles, the North Route follows the A39, and the South Route follows Quantock Road. There is a train station located 18 km (by road) from the Site in Bridgwater.

2.2.4. The 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.
- 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.

2.3 Phases of the Proposed Works

2.3.1. The Applicant's decommissioning strategy for HPB is to achieve a 'Safestore' condition. This would enclose the two nuclear reactors and other radioactive plant in a built structure, known as a Safestore. This approach will enable simpler dismantling of these structures at a later date, after a period of radioactive decay has occurred.

2.3.2. The Proposed Works have therefore been split up into three phases:

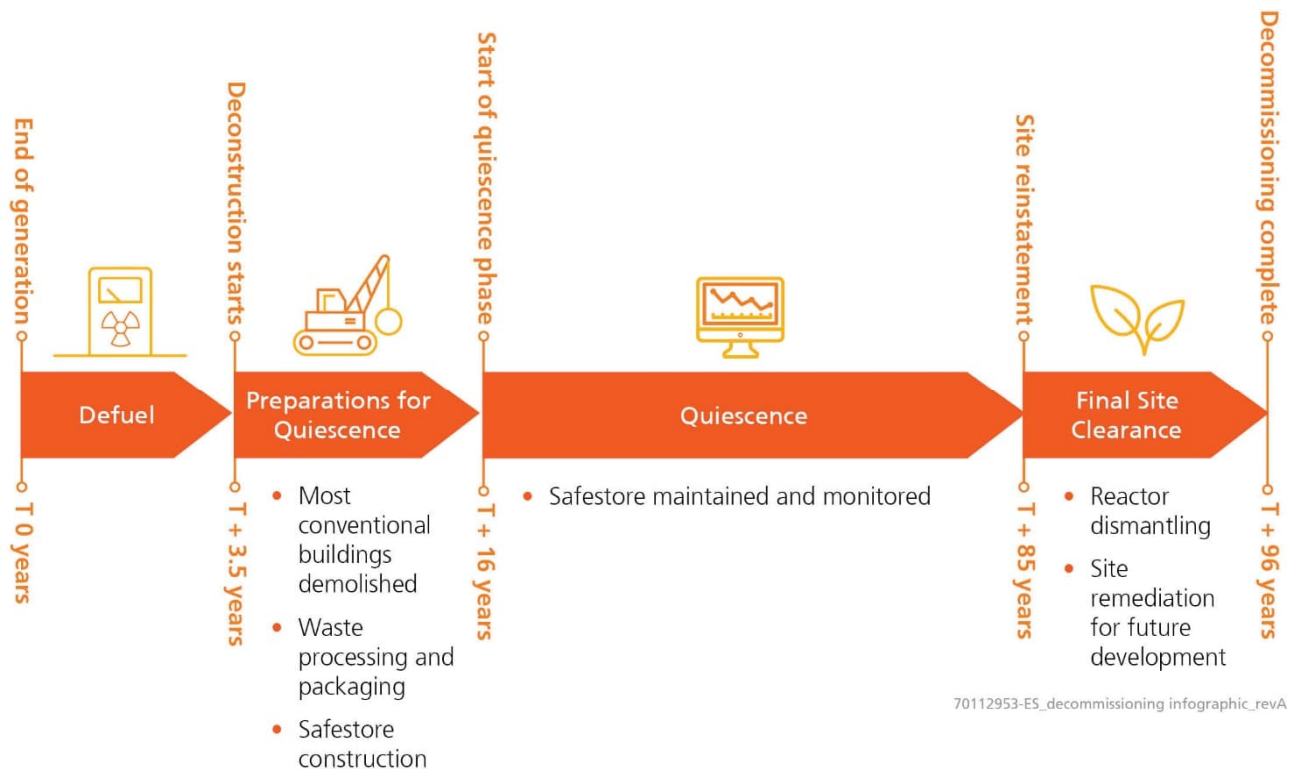
- Preparations for Quiescence phase – This phase includes the dismantling and deconstruction of all plant and buildings not included within the Safestore structure on-site, and the management of wastes generated from these activities. This would include dismantling and decommissioning of structures associated with electricity generation including the cooling water⁴ infrastructure. In addition, this phase includes the modification of the existing reactor building to create the Safestore structure.
- Quiescence phase – An almost 70-year period of relative inactivity with minimal management to allow further radioactive decay of materials within the Safestore. This would involve continuous monitoring and surveillance, with periodic care and maintenance interventions as required.
- Final Site Clearance – This will involve the dismantling and decommissioning of the Reactors, High Activity Debris Vaults and other plant retained within the Safestore and its subsequent removal from the Site. The Safestore structure will also be removed. Following this, works will focus on works needed to facilitate the delicensing of the Site to allow the land to be released for future re-use.

Dismantling and deconstruction works and management

2.3.3. An indicative decommissioning timeline is presented in **Graphic 2-4**. It represents the current understanding for the 'reasonable case scenario' in terms of programme for the completion of the Proposed Works.

⁴ Due to the large amount of heat generated in the nuclear reactor core during the electricity generating process, a cooling system is required to remove the heat generated. This requires a large volume of water that is pumped around the reactors.

Graphic 2-4 - The decommissioning programme



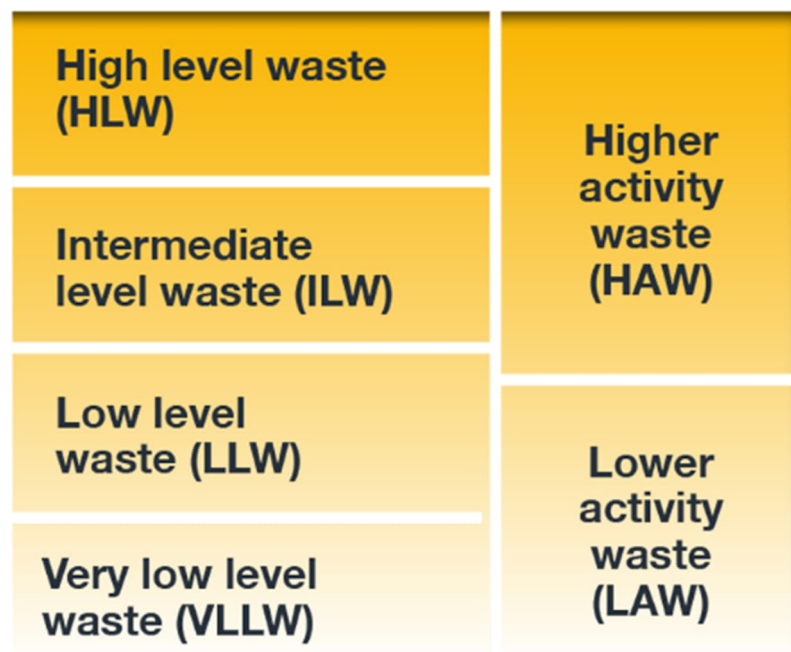
- 2.3.4. Hinkley Point B Nuclear Power Station has operated 24-hours a day, seven days a week through operations and subsequently defueling. During the Preparations for Quiescence phase working hours will change to represent the different types and nature of activities on the Site. Whilst some works may require 24-hour working, the majority of the Proposed Works will be limited to normal working hours between 07:30 and 18:00 hours Monday to Friday. In addition, security will remain 24 hours a day, seven days a week using shift arrangements.
- 2.3.5. During the Quiescence phase, works on the Site will be infrequent, with site monitoring or maintenance works mainly expected to take place 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.
- 2.3.6. It is expected that additional lighting may be needed in the Preparations for Quiescence phase at the start and end of days during winter, but this would be kept to a minimum and only where necessary for safe operations. The existing security lighting will be retained through the Preparations for Quiescence phase. Lighting is likely to reduce during the Quiescence phase before increasing during Final Site Clearance similar to the Preparations for Quiescence phase.
- 2.3.7. The workforce during the Preparations for Quiescence phase is expected to vary between 220-300 staff, supplemented by up to 250 additional contractor personnel depending on the works on-site at any given time.

- 2.3.8. Some buildings still contain accessible asbestos, and this will be removed during the Preparations for Quiescence phase, with any asbestos that is hard to access in the reactor building being removed at Final Site Clearance. This removal will be undertaken in-line with best practice and all legislation that governs working with asbestos, to maintain safety for workers and the local environment.
- 2.3.9. All materials and waste will be transported to and from the Site using the local road network. Radioactive waste would be transported off-site as required, using working processes already embedded during HPB operation and in-line with specific regulations.
- 2.3.10. During the peak year for Heavy Goods Vehicle (HGV) movements during the Preparations for Quiescence phase, the Site is expected to generate up to 30 HGV additional movements per day in total, across a working week (Monday - Friday). During the Quiescence phase there will be negligible traffic associated with the Site. During Final Site Clearance, vehicle movements are expected to be fewer than during the Preparations for Quiescence phase.

2.4 Waste and Materials management

- 2.4.1. All wastes will be handled in line with relevant waste legislation. Conventional wastes are material including metals, glass, plastics and other mixed wastes relating to demolition. This will be managed in accordance with the Waste Hierarchy.
- 2.4.2. Radioactive waste is broken down into two main categories for management, Higher Activity Waste (HAW) and Lower Activity Waste (LAW), as illustrated in **Graphic 2-5**.

Graphic 2-5 - Radioactive waste classification types



- 2.4.3. During the Preparations for Quiescence phase, it is expected that ILW and LLW will be managed using an Operational Waste Processing Facility (OWPF) and the Decommissioning Waste Processing Facility (DWPF) respectively⁵. For the purposes of the environmental impact assessment, it is assumed that these facilities would be constructed during the Preparations for Quiescence phase.
- 2.4.4. The DWPF will process primarily solid LLW through compaction, shredding and separating waste and will then send it off-site. The OWPF will process HAW which may include the washing of wastes and the encapsulation of this material in specialist waste containers. ILW from HPB requiring interim storage will be stored in the HPA ILW Store until a geological disposal facility (GDF)⁶ in line with Government Policy is available. Both the DWPF and OWPF will be decommissioned at the end of the Preparations for Quiescence phase.
- 2.4.5. A Waste Management Centre will be constructed to process both HAW and LAW during the Final Site Clearance phase and consign it off-site to the relevant facility.
- 2.4.6. Treated radioactive effluent discharges are already permitted and undertaken at the Site. Works are required at the beginning of the Preparations for Quiescence phase to modify the existing permitted discharge arrangements prior to the decommissioning of the Cooling Water System. This will require the modification of the existing permit for these discharges to the Severn Estuary.

⁵ It should be noted that there is no high level waste at HPB, and therefore HAW comprises ILW

⁶ Geological disposal involves isolating radioactive waste deep underground, inside a suitable rock volume to ensure that no harmful quantities of radioactivity ever reach the surface environment. A GDF will be a highly engineered structure consisting of multiple barriers that will provide protection over hundreds of thousands of years.

3 Consideration of alternatives

- 3.1.1. **Chapter 3: Alternatives** of the ES presents an overview of the alternatives considered in developing the preferred decommissioning strategy.
- 3.1.2. The preferred decommissioning strategy has been developed following appraisals of various decommissioning options. These options included:
- Prompt dismantling - Under this scenario, following defueling, decommissioning works on-site would happen immediately with the full decommissioning of the Site complete in a couple of decades.
 - Continuous dismantling – Under this scenario, decommissioning works in the early period would likely be slower but continuous, with activities to remove the reactor being complete approximately 40 years after the End of Generation.
 - Deferred reactor dismantling - Under these scenarios, various options were considered which essentially rely upon putting the Site into a safe, inactive state for varying periods of time to enable radioactive decay to take place prior to commencing reactor dismantling and associated tasks.
- 3.1.3. The options were appraised against the following objectives:
- To progressively reduce and remove the hazard on the Site while:
 - ensuring continued safety;
 - minimising the environmental impact as far as reasonably achievable;
 - decommissioning the station as soon as it is reasonably practicable to do so to release land from nuclear regulation for other use as appropriate; and
 - ensuring value for money in the expenditure of resources on decommissioning.
- 3.1.4.
- 3.1.5. The review concluded that a ‘deferred dismantling’ strategy was most appropriate for the Site based on the following benefits:
- lower radiation dose rates when dismantling the reactor;
 - makes a reduction in the quantity and level of radioactive waste arising from decommissioning which puts less pressure on existing and planned radioactive waste facilities;
 - allows time for waste disposal routes to be established; and
 - funding provision for the whole decommissioning lifecycle is made more secure due to the quiescent period when fund recovery growth can take place.

3.1.6. **Chapter 3** of the **Environmental Statement** also discusses the alternatives considered in respect of other key aspects of the Proposed Works noted below:

- Waste Management Facilities in the Preparations for Quiescence phase.
- Locations and approach to the installation of the active effluent discharge pipeline and sewage treatment plant line.
- Approach to dismantling of the cooling water intake structure.
- How to manage voids left from dismantling of buildings and structures.
- Approach to the modification of the Safestore.

4 The Approach to Environmental Impact Assessment

4.1 EIA scoping

- 4.1.1. The EIA assesses the environmental effects on resources (including the water environment) and receptors (including human beings) arising as a result of the Proposed Works.
- 4.1.2. Scoping forms one of the early stages of the EIA process, which sets out the potential environmental aspects that may be significantly impacted by the Proposed Works and which, therefore, would need to be assessed as part of the EIA.
- 4.1.3. An EIADR Scoping Report, outlining the proposed scope and assessment methodology for the environmental aspect studies to be undertaken as part of the EIA, was submitted to ONR on 05 October 2022. A Pre-application Opinion was adopted by the ONR on 07 December 2022. This Pre-application Opinion and the statutory consultee responses subsequently informed the assessment work and further design evolution.
- 4.1.4. In addition, the Applicant has undertaken two rounds engagement with the public between 10 October 2022- 21 November 2022 and 15 April 2024 - 27 May 2024, to give local stakeholders and communities the opportunity to be involved in the development of the decommissioning programme. Whilst there is no provision under the EIADR regulations to consult on the decommissioning strategy, the Applicant is committed to undertaking consultation, which is derived from best practice and meaningfully informs the development of plans for decommissioning.
- 4.1.5. The EIA has been undertaken as a requirement of the EIADR to support the application for consent to decommission HPB, drawing on the ONR Pre-application Opinion, and feedback from stakeholder engagement with the public.

4.2 Assessment process

- 4.2.1. The environmental effects of the Proposed Works have been assessed in terms of changes to the existing (i.e. current) environment (the baseline). This has been determined by collecting information on existing environmental conditions through surveys, reviews of databases, records and mapping and consultation with stakeholders. This helps to identify sensitive receptors and resources that may be impacted by the Proposed Works.
- 4.2.2. The approach to the assessment considers the sensitivity, importance or value of an affected resource or receptor' and the predicted change to the environment (i.e. the 'magnitude' or severity of an effect) as a result of the Proposed Works. Consideration is then given on whether the Proposed Works would be likely to have significant environmental effects (either positive or negative).
- 4.2.3. The aim of the EIA process is for 'significant' effects to be identified, with the goal of reducing any significant adverse effects through the design process or other measures. 'Significant' effects are considered to be those effects that represent key factors or material influences in the decision-making process.
- 4.2.4. The EIA takes into consideration all 'in-built' aspects (referred to as embedded measures) which may include design and management measures including those set out within the Outline Environmental Management Plan to limit the extent of potential environmental effects.

- 4.2.5. If significant effects are still likely to occur after allowing for the embedded measures, consideration has been given to whether any additional mitigation measures would avoid, offset or reduce the significance of effects.
- 4.2.6. A conclusion on whether an effect is considered to be significant or not is then given, taking into account all committed mitigation.

4.3 Reducing significant environmental effects via the design of the Proposed Works

- 4.3.1. One of the conditions of the nuclear site licence, is that the Licence Holder has adequate arrangements in place for the production and assessment of nuclear safety cases. The Applicant is required to prepare a nuclear safety case, which presents the evidence the facility or activity can be operated safely. It is required to be maintained live throughout the full lifecycle of the plant or facility, from concept design, through construction, commissioning, operation and, ultimately, decommissioning.
- 4.3.2. The Applicant has also 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. 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.
 - 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.
- 4.3.3. The IMS comprises of an extensive range of process; environmental management is one of the key IMS processes.
- 4.3.4. In addition to these as normal business systems, embedded environmental and good practice measures have been included as part of the Proposed Works to avoid, offset or reduce significant effects. These are outlined within the ES environmental aspect chapters **Volume I: Environmental Statement – Chapters 6-20**. Some of the embedded measures have been informed by consultation undertaken by the Applicant, or informed and influenced by policy guidance, best industry practice and regulatory requirements.
- 4.3.5. The Applicant has prepared a number of documents that will be submitted alongside the Environmental Statement. These documents include:
- HRA Screening Report.
 - Consultation Feedback Report.
 - Outline Environmental Management Plan.

5 The Environmental Impact Assessment

5.1 Air Quality

- 5.1.1. **Chapter 6: Air Quality** of the ES has considered the potential for effects from emissions to air of pollutants and dust, from the Proposed Works on people and important ecological sites. The main pollutants of concern in the UK in relation to health effects are nitrogen dioxide (NO₂) and fine air particles, referred to as particulates (Particulate Matter – PM).
- 5.1.2. To assess the dust emissions released during dismantling, decommissioning and construction activities, a desk-based assessment was undertaken for the Preparations for Quiescence phase as this is considered a worst-case across the three phases of decommissioning). The assessment has been undertaken in-line with standard industry guidance provided by the Institute of Air Quality Management.
- 5.1.3. Due to the low levels of additional daily traffic expected to be generated from the Proposed Works, effects of air emissions from traffic were screened out from detailed assessment as significant effects were considered unlikely.

Baseline

- 5.1.4. Air quality data was collected from a combination of desk-based research and monitoring stations. Current emissions originating from HPB comprise traffic emissions from the commuting staff and transportation of consumables and waste to and from the Site, as well as emissions from plant and machinery where required on the Site. The Site itself lies within a rural environment, and current pollutant levels are well below the relevant thresholds in the Air Quality Objectives (AQOs) established for the protection of human health and set out in legislation.
- 5.1.5. Local authorities are required to assess air quality within their administrative area. They are required to declare an Air Quality Management Area (AQMA) where pollutant levels may exceed AQOs. There are two AQMAs within the jurisdiction of Somerset Council (previously Somerset West and Taunton Council). The AQMAs are located further than 20 km from the Site. Given their distance from the Site it is not anticipated that they will be affected by the Proposed Works, or the traffic generated by the works.
- 5.1.6. All potential residential receptors are located more than 250 m from the Site. Potentially sensitive ecological receptors located immediately adjacent to the Works Area are:
- Bridgwater Bay Site of Special Scientific Interest (SSSI).
 - Somerset Wetland National Nature Reserve (NNR).
 - Severn Estuary Special Area of Conservation (SAC) / Special Protection Area (SPA) / Ramsar.

Embedded measures

- 5.1.7. Appropriate embedded measures would be incorporated into the Proposed Works which will include the implementation of a Dust Management Plan that reflects guidance from the Institute of Air Quality Management. The Dust Management Plan will incorporate measures to minimise dust emissions during construction and demolition activities and define requirements for regular monitoring of the Site and at nearby receptors to ensure the reduction of impacts. Further details are included in the **Chapter 6: Air Quality** of the ES.

Assessment of likely effects

- 5.1.8. During the Proposed Works are predicted to result in a maximum of a high risk of dust soiling and subsequent impacts on ecological receptors. Implementation of the measures set out in a Dust Management Plan, will however ensure dust effects on these receptors are negligible. Given that effects on air quality as a result of emissions from traffic were screened out from assessment, the overall effect on air quality arising from the Proposed Works would be **Not Significant**.

5.2 Climate Change

- 5.2.1. **Chapter 7: Climate Change** of the ES provides an assessment of the anticipated greenhouse gases (GHG) emissions which will be produced during the life cycle of the Proposed Works in line with industry guidance and relevant planning policy. It does this in the absence of a 'do nothing' scenario normally associated with these types of assessments as decommissioning is a requirement for the Site and thus a 'do nothing' scenario is not considered credible.
- 5.2.2. The vulnerability of the Proposed Works to climate change has also been analysed in the Environmental Statement and this is summarised in an appendix to the chapter (**Appendix 7C** of the ES). This appendix largely relies upon the other aspect assessments which investigate the possibility for the Proposed Works to be affected by changes as a result of climate change and considers how the Proposed Works will not be affected by these changes.

Baseline

- 5.2.3. The GHG baseline recognises the fourth, fifth and sixth UK carbon budgets. These carbon budgets were set out by the UK Government in 2009 to outline the total permitted budget for 5-year periods to ultimately meet the requirement of the Climate Change Act 2008 to reduce its net GHG emissions by at least 100% below 1990 levels by 2050.

Embedded measures

- 5.2.4. Appropriate embedded measures would be incorporated into the Proposed Works which will include (but not limited to):
- Ensuring plant equipment is well maintained to ensure efficiency of energy consumption.
 - Consolidating deliveries where possible and encouraging sustainable transport for workforce and introducing other measures to drive fuel and therefore carbon efficiency.
 - Where possible, use of locally sourced construction materials, as well as using materials which share, lease, reuse, repair, refurbish and recycle.
 - Periodic reviews through the Proposed Works lifecycle to promote the identification of opportunities for reducing GHG emissions from the Proposed Works.

Assessment of likely effects

- 5.2.5. Overall lifetime GHG emissions associated with all three phases of the Proposed Works are estimated to be 228 kilotonnes of carbon dioxide equivalent (ktCO₂e). In relation to relevant UK carbon budgets, this would equate to 0.002% of the UK's fourth carbon budget, or 0.005% of the UK's fifth carbon budget or 0.009% of the UK's sixth carbon budget. This contribution to the various existing carbon budgets would therefore be considered **Not Significant**.

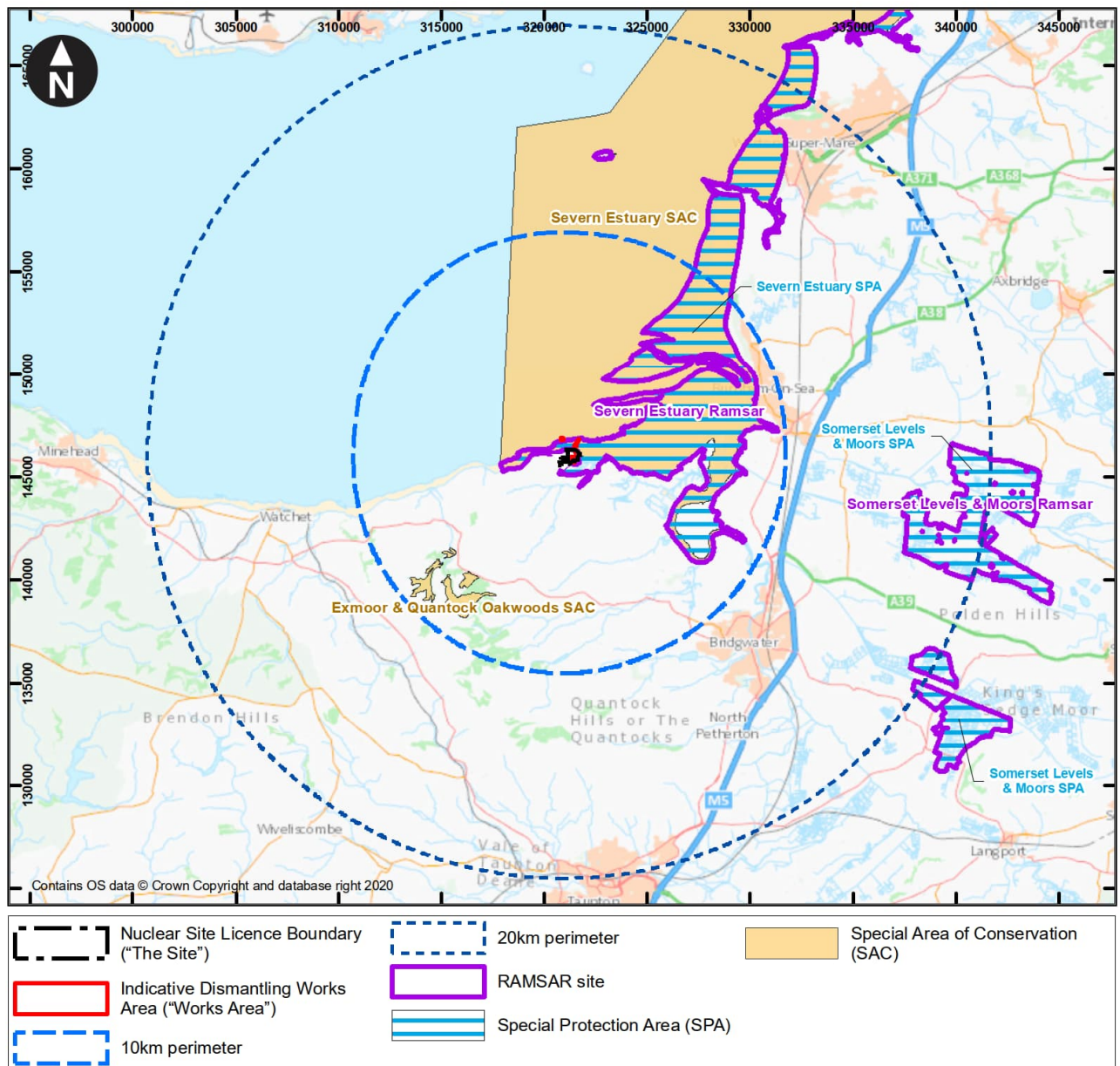
5.3 Terrestrial Biodiversity and Ornithology

- 5.3.1. **Chapter 8: Terrestrial Biodiversity and Ornithology** assesses the effects of the Proposed Works on land-based biodiversity receptors. The assessment method is aligned with good practice defined by the Chartered Institute of Ecology and Environmental Management (CIEEM).
- 5.3.2. Effects on ecological features arising from the Preparations for Quiescence and Final Site Clearance phases are assessed. The Quiescence Phase, which will be predominantly maintenance activities, is likely to have no significant effects on ecological features and was scoped-out of the assessment at the EIA Scoping stage.

Baseline

- 5.3.3. The Works Area is mainly hardstanding and buildings, with smaller areas of amenity grassland, plantation woodland and scattered trees. Beyond the Works Area there is a fringe of woodland and scrub, with areas of open grassland. Hinkley Point A borders the Works Area with the Hinkley Point C development beyond this.
- 5.3.4. There are nine statutory biodiversity conservation sites within 10 km of the Works Area, including four European Sites (including Ramsar sites), four SSSIs and one NNR. There is a further SPA and Ramsar site within 20 km.

Graphic 5-1 - Statutory biodiversity conservation sites



- 5.3.5. No bat roosts have been recorded within the Works Area; however, bat activity was recorded within the perimeter areas. A tree approximately 50m from the Works Area has previously been confirmed as a bat roost. No other bat roosts were recorded by the baseline surveys, however species previously recorded roosting within the Site, around the perimeter of the Works Area, in bat boxes include common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, brown long-eared bat, Natterer's bat, noctule and Leisler's bat.
- 5.3.6. The Works Area comprises habitat which has poor suitability for badgers. However, badger could be subjected to loss of habitat and disturbance as a result of the Proposed Works.

- 5.3.7. Breeding bird surveys recorded low numbers of common, widespread species that are typical of Somerset. Species of particular interest included dunnock, herring gull, linnet, skylark and song thrush, which are national conservation priorities. These species were however recorded in low numbers. 20 breeding pairs of lesser black-backed gull were recorded.
- 5.3.8. Low numbers of common and widespread species of non-breeding birds that are typical of Somerset and coastal habitats were recorded. Species recorded on more than 60% of survey visits include curlew, mallard, shelduck amongst others.
- 5.3.9. The baseline surveys recorded low populations of both slow worm and grass snake to the south-west and south-east side of the Works Area, associated with areas of tall ruderal vegetation and scattered scrub.
- 5.3.10. Some, though limited, evidence of otter activity was recorded on a ditch at the eastern boundary of the Site, outside of the Works Area, in 2024. In addition, Water Vole activity was recorded on the ditch network outside the Site, to the east and south/south-east.

Embedded measures

- 5.3.11. Embedded measures are incorporated into the Proposed Works to:
 - Protect habitats and biodiversity conservation sites, including restricting work as far as practicable to hardstanding.
 - Protect mammals and other fauna, including storing materials away from habitats and preventing mammals getting into the Works Area.
 - Specific measures to protect bats, badger, reptiles and birds.
 - Periodic reviews and updates of the biodiversity baseline to identify any changes needed in the embedded measures to reduce impacts on receptors.
- 5.3.12. Whilst no otters were found within the Works Area, routine monitoring, in accordance with the Integrated Management System, will be undertaken as appropriate. If Otters are found, measures will be developed to minimise risk to these species.
- 5.3.13. Similarly, whilst no invasive species were identified within the Works Area, standard measures will be applied to minimise risk of spreading.

Assessment of effects

Biodiversity conservation sites

- 5.3.14. There will be no habitat loss within statutory and/or non-statutory biodiversity conservation sites. The Proposed Works incorporate measures to minimise dust deposition and there is likely to be negligible habitat degradation due to dust. The effect of habitat loss and dust deposition on biodiversity conservation sites is likely to be neutral and **Not Significant**.
- 5.3.15. A limited increase in demolition/construction traffic and any associated increase in vehicle emissions is likely to have a neutral effect on statutory and non-statutory biodiversity conservation sites. The effects of vehicle emissions on both statutory and non-statutory biodiversity conservation sites are therefore likely to be **Not Significant**.

Habitat and Protected Species

- 5.3.16. The Proposed Works are mainly confined to hard standing. Any unavoidable habitat loss will be limited to small areas of habitat types that are common and widespread. This would have a neutral effect on these habitats, which is **Not Significant**.
- 5.3.17. The Proposed Works may result in limited displacement of foraging bats and breeding/non-breeding birds. These fauna are however likely to be displaced into suitable surrounding habitats and effects on them are likely to be neutral, or of very low magnitude, and **Not Significant**.

5.4 Marine Biodiversity

- 5.4.1. **Chapter 9: Marine Biodiversity** of the ES has considered the impact of the Proposed Works on marine features and receptors. The assessment considers habitats, intertidal⁷ and subtidal⁸ species of flora, fauna, fish and mammals.
- 5.4.2. The assessment considers the effects that may potentially occur during the Proposed Works, specifically during the Preparations for Quiescence and Final Site Clearance phases, as this is where the impact pathways are most likely to occur.

Baseline

- 5.4.3. The baseline assessment of marine biodiversity uses data gathered from field surveys, relevant published technical guidance and information, and professional knowledge.
- 5.4.4. The Works Area is partially located within the Severn Estuary Special Area of Conservation (SAC) and Special Protection Area (SPA) and Ramsar site (to the north, east and south of HPB) and in proximity to the Somerset Levels and Moors SPA / Ramsar site (approximately 16 km to the east).
- 5.4.5. A number of habitat types were identified by survey of the intertidal zone within the Study Area. In proximity to the HPB marine infrastructure, the seabed was found to predominantly consist of soft sediments. A number of marine mammals have been recorded as being present either throughout the year, or seasonally, within the wider Bristol Channel. These include harbour porpoise, Risso's dolphin, common dolphin, bottlenose dolphin and minke whale. Marine mammals do not occur frequently in the area offshore of the HPB.
- 5.4.6. Over 80 estuarine and marine fish species have been recorded in the Severn Estuary. Most of these species undertake regular migrations and tend to move seasonally in waves up and down the estuary. Seven fish species are known to migrate between sea and freshwater (and through the Severn Estuary) including Atlantic salmon, twaite shad, allis shad, river lamprey, sea lamprey, sea trout, and European eel.

Embedded measures

- 5.4.7. The methodologies for delivery of the Proposed Works outlined in **Chapter 2: The Decommissioning Process** of the ES, limit the disturbance of sediment. Further embedded measures which reduce the potential for effects include:
- Removal of structures in the marine environment using conventional and non-explosive methods.

⁷ The area of a seashore which is covered at high tide and uncovered at low tide.

⁸ The area of a seashore which is below the level of low tide, that is always underwater.

- Minimising subtidal working where practicable.
- Appropriate scheduling of works to reduce impact in species.
- Pollution control measures to prevent contaminant spillage.

5.4.8. Additional mitigation was also recommended to reduce potential effects on subtidal habitats:

- Pre-works *Sabellaria* survey to identify extent of *Sabellaria* reef prior to marine works commencing;
- Positioning of plants and equipment to avoid *Sabellaria* where possible and repositioned as few times as technically feasible; and
- Where avoidance of *Sabellaria* is not possible, disturbance should be limited to low quality *Sabellaria* wherever possible.

Assessment of likely effects

- 5.4.9. The assessment of effects upon marine biodiversity as a result of activities during the Preparations for Quiescence and Final Site Clearance phases concluded that effects would be Negligible (**Not Significant**) on intertidal habitats and species and on subtidal habitats and species.
- 5.4.10. Effects on marine mammals and fish would also be Minor to Negligible (**Not Significant**), as a result of the current marine conditions, the limited scale and duration of the Proposed Works and the works being undertaken in accordance with embedded measures that minimise disturbance of sediment and noise creation.

5.5 Coastal Management and Water Quality

- 5.5.1. **Chapter 10: Coastal Management and Water Quality** of the ES has considered the impact of the Proposed Works on coastal processes.
- 5.5.2. Most coastal processes are not in themselves receptors but are instead 'pathways'. However, changes to coastal processes have the potential to indirectly impact other environmental receptors including marine biodiversity. The assessment considers changes to wave, tidal and sediment transport movements, and subsequent impacts on water quality.
- 5.5.3. The assessment considers the effects which would arise from all phases of the Proposed Works and is based on detailed desk study and marine water quality surveys at the Site.

Baseline

- 5.5.4. Hinkley Point B is located on the coast of the Severn Estuary in Somerset, approximately 12 km north-west of Bridgwater and is bounded by several sites designated for nature conservation interest. Existing marine infrastructure includes a cooling water intake structure located 540 m offshore from the face of the sea wall. A cooling water discharge tunnel extends approximately 200 m from the sea wall to the head of an open discharge channel cut into the rock.
- 5.5.5. The North Devon and Somerset Shoreline Management Plan (SMP2) covers the coastline at Hinkley Point B and includes continued provision of protection of the existing power station against flood and erosion.

- 5.5.6. The development of HPC has provided further flood prevention to the west since the development of SMP2. SMP2 outlines the intention to continue to provide flood protection to the majority of properties and infrastructure but adopting a more sustainable and affordable alignment.
- 5.5.7. The coastal zone in the Bristol Channel and Severn Estuary off HPB has a mean spring tidal range exceeding 10 m, with significant tidal currents, which result in high concentrations of suspended sediment. Water sampling surveys undertaken offshore at HPB demonstrated marine water quality was within expected parameters for a coastal site. In addition, nutrient results were found not to exceed Environmental Quality Standards (EQS).

Embedded measures

- 5.5.8. The methodologies for delivery of the Proposed Works outlined in **Chapter 2: The Decommissioning Process** of the ES, limit the disturbance of sediment. Further embedded measures which reduce the potential for effects include:
- limiting the use of anti-fouling materials;
 - minimising subtidal working and the use of methods which reduce the disruption of sediments; and
 - water testing prior to release discharge to ensure it meets environmental standards.

Assessment of likely significant effects

- 5.5.9. Effects relating to changes in currents, waves, sediment transport and coastal processes are considered to be **Not Significant**, due to the minimal footprint of the intake structure, and that its removal would return the coastal processes to a more natural regime. Effects on the North Devon and Somerset Shoreline Management Plan's policies are also considered to be **Not Significant**, as the Proposed Works do not involve the dismantling of any existing coastal defences, and the changes in hydrodynamic regime will be minimal and highly localised within a section of coast already defended from erosion by a seawall. Negligible to minor (**Not Significant**) effects are anticipated on water quality with embedded measures to prevent sediment disturbance and manage the discharge of pollutants to the coastal environment.

5.6 Surface Water and Flood Risk

- 5.6.1. **Chapter 11: Surface Water and Flood Risk** of the ES has considered the impact of the Proposed Works on the surface water environment as well as flood risk. It includes consideration of the onshore surface water catchment area of the Site as well as adjacent drainage ditches, sea defences and other water infrastructure.
- 5.6.2. The assessment has considered the effects arising from across all three phases of the decommissioning and is underpinned by numerous sources of publicly available information and past reports specific to HPB. Furthermore, a site walkover was conducted to gain further understanding of the baseline surface water environment within the Site and wider Study Area (which covers the onshore surface water catchment area of the Site and the adjacent and downstream extent of drainage ditches, the sea defences and other water infrastructure).

Baseline

- 5.6.3. The topography within the Site varies between 9m and 20m above sea level with an average elevation of approximately 10 m AOD. There are a series of small watercourses, locally known as 'rhynes', to the east of the Site. The nearest rhyne to the Site is the Wick Moor/Outfall Rhyne, which

flows underneath Wick Moor Drove and passes underneath the access track which connects HPB to the existing Sewage Treatment Works and discharges into the Severn Estuary to the east of HPB.

- 5.6.4. Within the Site, the surface water drainage system with embedded pollution prevention systems receives water before discharging it to the tidal waters of the Severn Estuary.
- 5.6.5. The Environment Agency Flood Risk Map for Planning indicates that the majority of the Site and Works Area is at low probability of flooding from rivers or the sea, and thus have less than 0.1% chance of flooding in any year. The site is generally elevated (>9 m AOD) above the surrounding floodplain.
- 5.6.6. However, some areas of the Site are at a lower level and have a higher probability of flooding from rivers or the sea. The Site and Works Area is protected by coastal sea defences, notably a concrete wall and additional raised gabion wall⁹ defences along the length of the northern site boundary and by an embankment extending to the east of the Site.
- 5.6.7. Parts of the Site are at risk from varying degrees of surface water flooding during storm events. These are primarily areas of internal roadways between buildings on the Site. These areas of surface water flooding are drained via the Site drainage system.

Embedded measures

- 5.6.8. Appropriate embedded measures would be incorporated into the Proposed Works including (but not limited to) measures including:
 - Preparation of an emergency plan to ensure that anyone on Site understands the procedures in the event of potential or actual flooding from either extreme surface water or tidal flooding on Site.
 - Design and siting of the proposed DWPF and OWPF will be built above the highest predicted flood level for all sources of flood risk, and the proposed Safestore building will be constructed to resist external floodwaters from entering the building, meaning it will not be at risk from flooding;
 - Implementation of good practice pollution prevention guidance at the Site.
 - Maintaining site protection and monitoring for as long as required to ensure a good condition is maintained at the Site and offsite and to help identify any requirement for drainage system actions.
 - Undertaking surface water monitoring to ensure surface water quality is maintained.

Assessment of likely significant effects

- 5.6.9. All phases of the Proposed Works were considered in the assessment of surface water and flood risk.
- 5.6.10. The assessment considered the risk to on-site infrastructure and staff to flooding through changes in hardstanding and alteration to existing pathways from groundworks and increases in tidal flood risk. The assessment concluded that proposed infrastructure and modification of the reactor buildings to the Safestore during the Preparations for Quiescence would be safe from external flooding (**Not Significant**). Similarly, the majority of the Works Area is not at risk from tidal flooding. The Proposed Works are not expected to change the flood risk apart from a slight increase in floodplain from Safestore demolition at the end of the Final Site Clearance phase, when there will be no on-site receptors, and risk from tidal flooding is considered to be **Not Significant**, considering embedded

⁹ A gabion is a cage, cylinder or box filled with rocks, concrete, or sometimes sand and soil for use in civil engineering, road building, erosion control and landscaping.

measures in place. Following good practice outlined in the EMP (adhering to a flood warning, response and evacuation plan) will ensure no on-site staff will be at risk from any increase in surface water flooding and effects **Not Significant**.

- 5.6.11. The potential effects on surface water quality are likely to be greatest during the Preparations for Quiescence phase as this is when most demolition and site clearance activities will be carried out. On the basis of the inclusion of embedded measures, including utilising measures set out under the relevant pollution prevention guidance and surface water monitoring, it is considered the likely effects associated with the Proposed Works would be low (**Not Significant**).

5.7 Soils, Geology and Hydrogeology

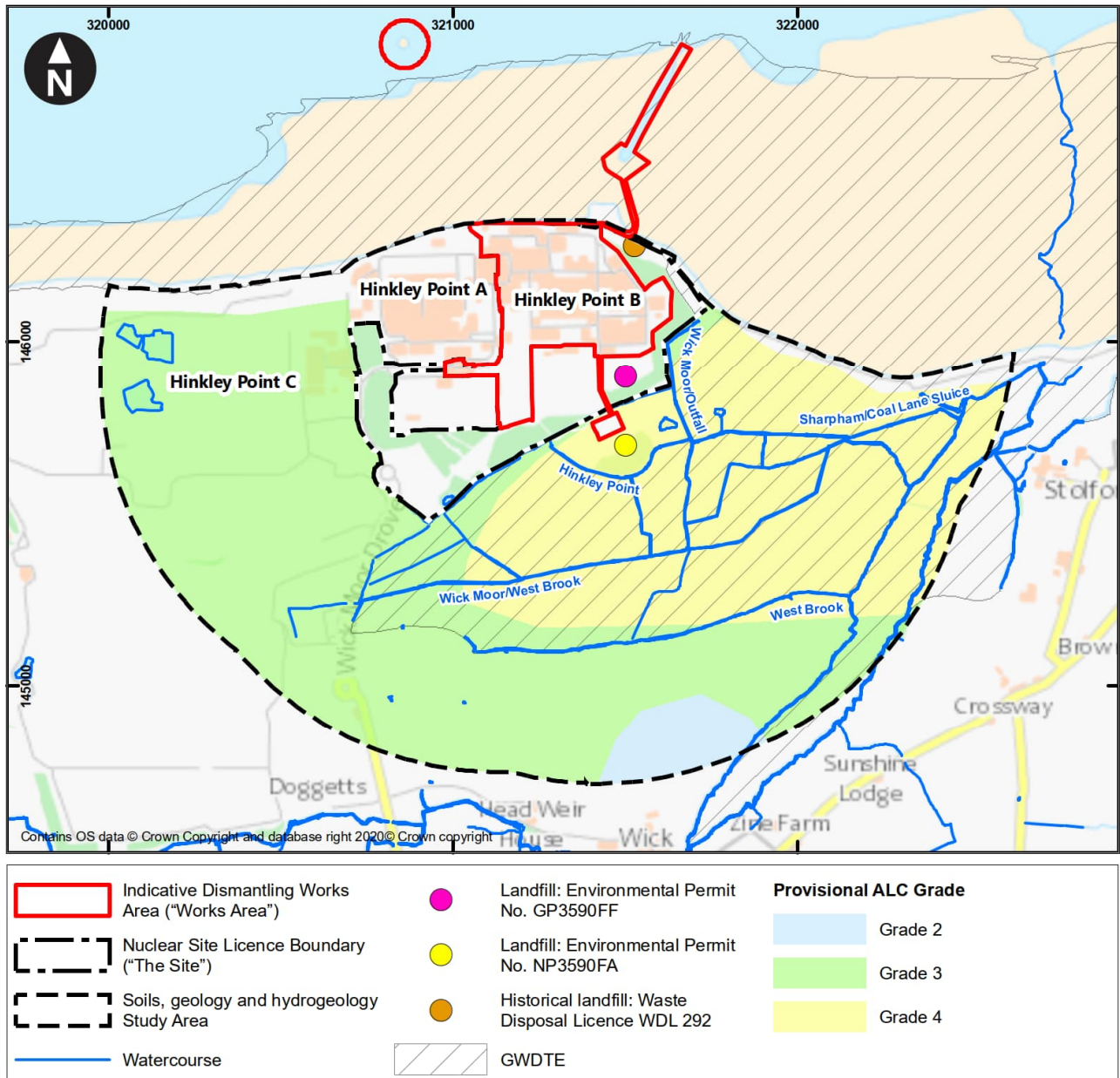
- 5.7.1. **Chapter 12: Soils, Geology and Hydrogeology** of the ES has considered the impact of the Proposed Works on soil resources, geology and land contamination receptors. The potential effects of some of the activities required during the Proposed Works include the exposure of current and future users of the Site or adjacent land to health impacts, and impacts to groundwater or surface water, due to contamination that may be encountered during intrusive works and its possible mobilisation to soil or the water environment.
- 5.7.2. The assessment has considered the entirety of the Proposed Works, as each stage has the potential to lead to effects on these receptors. This assessment is based on various publicly available data sources, ground investigation, and soil and groundwater monitoring at the Site and defines embedded measures to minimise the associated effects on environmental receptors.

Baseline

- 5.7.3. The majority of the Works Area comprises the HPB power station which ceased generating electricity in August 2022. Defueling is ongoing. To the west, HPA is undergoing decommissioning. There are two historic landfills with active permits¹⁰ to the northeast and east of the Works Area respectively. A third historical landfill is located south of the Works Area. It is likely that the majority of the naturally occurring soils within the Works Area were removed during construction of HPB. The land uses surrounding the Site are illustrated on **Graphic 5-2**.

¹⁰ These permits operate under The Environmental Permitting (England and Wales) Regulations 2016

Graphic 5-2 - Land use surrounding the Site



- 5.7.4. The Works Area is predominantly covered by buildings and hardstanding. Geology within the Works Area is mainly made ground largely composed of limestones and scales excavated from the deeper foundations. Some manmade materials including brick and timber have previously been found at the Works Area.
- 5.7.5. The Site is subject to routine monitoring to inform its understanding of land condition and to provide information to support compliance with various permits held by the Site. Areas of Potential Contamination (APCs) were identified by desk study of previous monitoring on the Site. Five of these APCs were identified as high risk with further investigation, monitoring or remediation recommended.

Embedded measures

- 5.7.6. Appropriate embedded measures would be incorporated into the Proposed Works including (but not limited to) measures including:
- Ongoing monitoring of surface and groundwater for as long as required to support the permitting process and ensure potential existing contamination is managed.
 - Implementation of a Waste Management Plan (WMP) and Site-wide Environmental Safety Case (SWESC).
 - Design of any new monitoring wells in line with appropriate guidance and standards.
 - Undertaking of drainage surveys on a prioritised basis.
 - Implementation of good practices on pollution control.
- 5.7.7. Further detail is provided within **Chapter 12: Soils, Geology and Hydrology** of the ES and the Outline EMP.

Assessment of likely significant effects

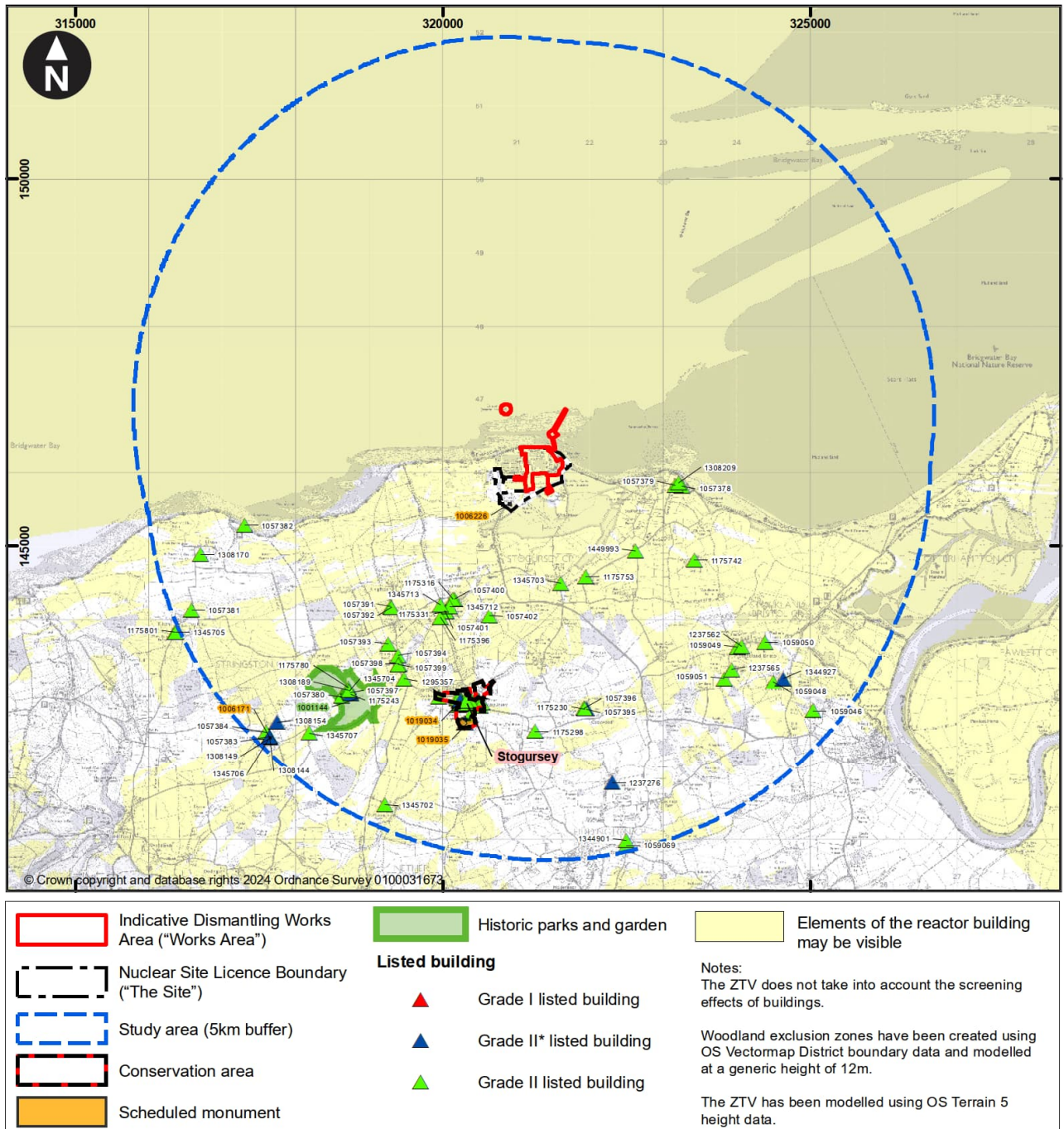
- 5.7.8. The assessment considered the likely effects on soils, geology and hydrogeology as a result of the following activities:
- Land quality ground investigations (e.g. excavations/trial pits).
 - Leaks/spills of fuels and oils from plant and storage tanks during construction work.
 - Removal of foundations/ floor slabs, road surfaces.
 - Backfilling below ground voids and reuse of site-won materials, and contamination from below ground structures.
 - Laydown and storage, including soil and material stockpiles.
 - Construction of below ground structures, concrete laying and movement of materials.
 - Removal of drains, pumping and dewatering schemes.
 - Drilling.
- 5.7.9. With the relevant embedded measures in place, the risk to environmental receptors during the Proposed Works are considered to be negligible (**Not Significant**).

5.8 Historic Environment

- 5.8.1. **Chapter 13: Historic Environment** of the ES has considered the impact of the Proposed Works on local designated and non-designated heritage assets. Potential effects which have been assessed include direct effects (including the loss or damage) and indirect effects (for example, change in the setting of a heritage feature) on heritage assets.
- 5.8.2. The assessment has been informed by a desk-based study, reviewing online data sources and analysing records of listed buildings, scheduled monuments, known archaeological assets, historical mapping, as well as site survey.

- 5.8.3. The Study Area for this assessment is a 5 km radius from the Works Area and has been determined in accordance with best practice, through the application of a Zone of Theoretical Visibility (see **Graphic 5-3**). All phases of the Proposed Works have been included in the assessment. The potential for the works to impact buried archaeology was ruled out at the scoping stage as any buried archaeology at HPB was considered very likely to have been lost or removed as part of previous construction. Likewise, the impact of the Proposed Works on Marine Heritage features was also scoped out prior to the submission of the Environmental Statement in response to a Pre-Application Opinion response from the ONR. Further justification of this is provided in **Appendix 5B**.

Graphic 5-3 - (Figure 13.1 of the ES) Designated Asset Data within Study Area



Baseline

- 5.8.4. Designated heritage assets are statutorily protected and include listed buildings, scheduled monuments, registered park and gardens and conservation areas. There are no designated heritage assets within the Site or Works Area. A scheduled monument, Pixie's Mound, is located 268 m south-west of the Works Area. Within the wider 5 km Study Area there are 3 further Scheduled Monuments, Listed Buildings and 1 Conservation Area. However, most of these assets were scoped out as receptors of the assessment as there was deemed no pathway for indirect impacts through changes of setting.

- 5.8.5. Non-designated heritage assets can include artefacts, sites of archaeological interest or surviving structures and man-made features within the landscape that are of historic interest but are not statutorily protected. Within the Works Area, there is one non designated heritage records, with a further 24 non-designated heritage records located within a 1 km radius of the Works Area.

Embedded measures

- 5.8.6. Embedded measures would be incorporated into the Proposed Works to manage the potential effects on heritage receptors. This includes the preparation of a written scheme of building recordings prior to the commencement of the Preparations for Quiescence phase to allow for buildings within the Site to be recorded to preserve records of potential historic interest.

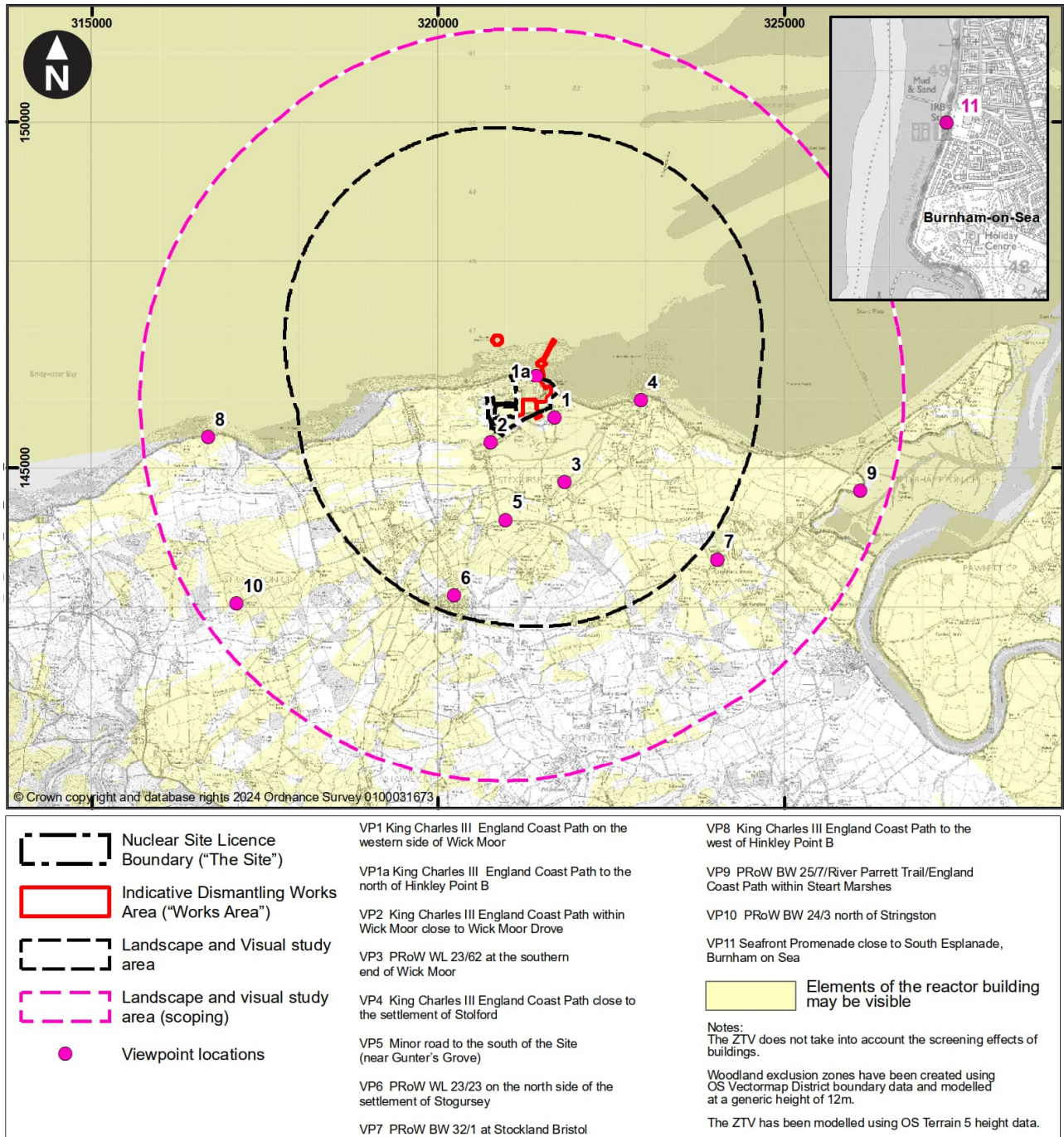
Assessment of likely significant effects

- 5.8.7. All phases were considered in the assessment of historic environment. The loss of buildings from within the Site was considered to be Minor (**Not Significant**). The impact of the Proposed Works on the setting of designated historic assets were deemed **Not Significant** in all phases or had no effect.

5.9 Landscape and Visual

- 5.9.1. **Chapter 14: Landscape and Visual Impact Assessment (LVIA)** of the ES has considered the impact of the Proposed Works on landscape, seascape and visual amenity. The LVIA has been undertaken in accordance with best practice guidance and informed by national and local planning policy and engagement with Somerset Council. The assessment uses a Study Area of 3 km, taken from the edge of the Works Area and considers all three phases of the Proposed Works.
- 5.9.2. The LVIA is informed by a desk study, undertaken with reference to numerous public data sources. The desk study informed relevant and representative viewpoint locations, which were photographed and provide the basis for assessment in this chapter.
- 5.9.3. Numerous maps and visualisations have been created to advise the assessment; these include:
- computer-generated maps to show the surrounding areas where it may be possible to see the Proposed Works; and
 - viewpoints photographs.

Graphic 5-4 - (Figure 14.2ii of the ES) Zone of theoretical visibility and viewpoint locations



Baseline

- 5.9.4. HPB predominantly features built form including the reactor building, and an expansive range of smaller ancillary buildings, warehouses and tanks.
- 5.9.5. The topography of the Site and surrounding area consists of the Somerset coast with land gently rising to form the foothills of the Quantock Hills National Landscape. Low-lying land featuring flat open marshy grassland lies to the east of the Site. Further inland, the landscape is characterised by pastoral fields, with a limited coverage of woodland.
- 5.9.6. Settlement patterns reflect the isolated nature of the coastal landscape. Small hamlets Wick, Shurton, Burton and Knighton along with the larger settlement of Stogursey are within the Study Area.
- 5.9.7. The 93 km Brean Down to Minehead section of the King Charles III England Coastal Path traverses the coastline to the north of HPB. Promoted routes in the area include the West Somerset Coast Path and Castles & Coast Way are also within the Study Area.
- 5.9.8. There are no national landscape designations e.g. National Parks within the Study Area. However, the Quantock Hills National Landscape lies approximately 5.2 km to the west/ south-west of the Works Area.

Embedded measures

- 5.9.9. Appropriate embedded measures would be incorporated into the Proposed Works including (but not limited to) the following measures:
 - The Safestore cladding being light grey (like “goosewing” grey) colour to reduce its visibility; and
 - The implementation of an Interim State Landscape Plan prior to the start of the Quiescence phase was considered, however due to effective screening existing at the Site due to woodland belts to the east, south and west and floodwall to the north, it was concluded this is not necessary.

Assessment of likely significant effects

- 5.9.10. Throughout the Preparations for Quiescence, Quiescence and Final Site Clearance phases, several adverse and beneficial residual effects have been identified. The following effects were identified:
 - Not Significant landscape effects on the character and the key characteristics of the LCA Sub-Areas as a result of the Proposed Works at HPB (on an individual basis);
 - Localised Significant visual effects at peak times of activity during the Preparations for Quiescence and Final Site Clearance phases of the Proposed Works at HPB (on an individual basis) for the following receptors:
 - residents at a small number of locations on the western edge of Stolford;
 - westbound walkers using the King Charles III England Coast Path / West Somerset Coast Path from an approximately 2.5 km section of the routes between Stolford and the western edge of the Site;
 - eastbound walkers using the King Charles III England Coast Path / West Somerset Coast Path, from an approximately 750 m section as it passes to the north of HPA/HPB; and

- a small proportion of the local routes within public rights of way (PRoW) network D (Wick to Stolford), particularly from local PRoWs 23/95, 23/107 and 23/101 close to the coastline to the east of HPB.

5.9.11. Residual effects on other receptors which have been assessed are considered to be **Not Significant**.

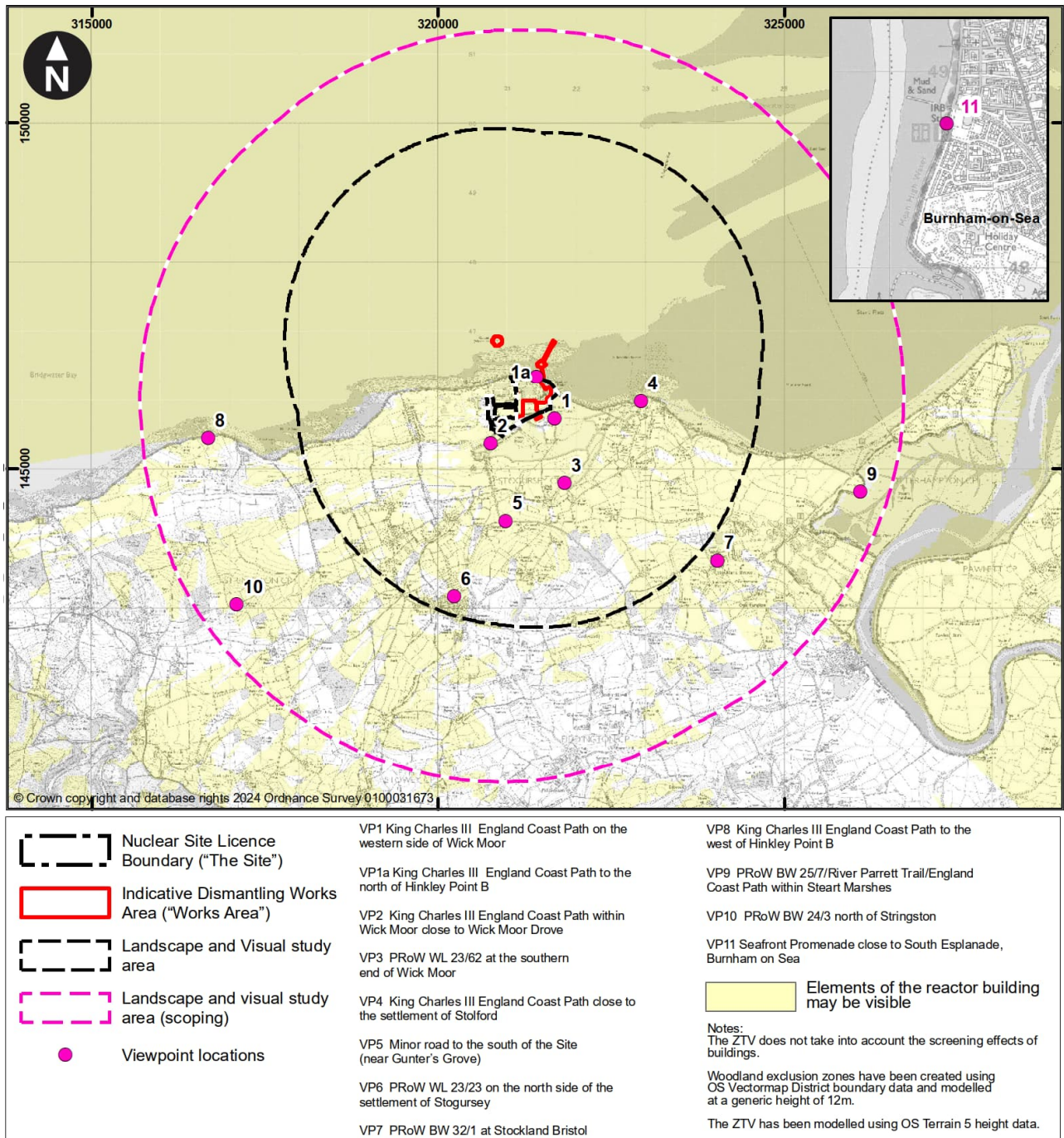
5.10 Noise and Vibration

- 5.10.1. **Chapter 15: Noise and Vibration** of the ES has considered the impact of noise and vibration generated from the Proposed Works on Site and from traffic movements.
- 5.10.2. The assessment has focussed on the Preparations for Quiescence phase, as this is the phase which is expected to represent the worst-case scenario for noisy activities on the Site as it is when the main dismantling and demolition works occur. This phase is also expected to represent the worst case in respect of the daily average traffic flow, which can then be assumed to have the highest impacts at properties adjacent to the transportation route for materials and wastes. Given this, worst-case assumption conclusions can be drawn on impacts during later phases of the Proposed Works.

Baseline

- 5.10.3. Noise monitoring undertaken in 2009 and more recent data gathered between 2016 and 2020 to inform the HPC EIA has been used to inform the assessment in order to gain baseline data that is not impacted by ongoing construction works at HPC.
- 5.10.4. The measured sound levels from these surveys were generally considered to be typical of the locations where the monitoring data were acquired. There are few roads or permanent habitations in the immediate area. Close to the shoreline the noise from the Bristol Channel would have been the predominant noise in the acoustic environment. Other noise sources were noted (local activity, animal sounds, wind in trees, etc.), however these did not affect the validity of the measurements.
- 5.10.5. The construction activity at the HPC site did not significantly influence the baseline at monitoring locations.

Graphic 5-5 - (Figure 15.1 of the ES) Baseline survey locations and noise sensitive receptors



Embedded measures

5.10.6. Measures to control noise levels during the Proposed Works include (but not limited to):

- conduct the Proposed Works using good practice for noise reduction;
- all noisy activities to be carried out in normal working hours; and
- use of Best Practicable Means taken from industry standards to identify mitigation to prevent significant effects.

Assessment of likely significant effects

- 5.10.7. Noise levels arising from decommissioning works in the Works Area and traffic associated with the Proposed Works are considered to have a minor adverse effect on receptors (**Not Significant**).

5.11 Traffic and Transport

- 5.11.1. **Chapter 16: Traffic and Transport** of the ES considers the anticipated change in traffic levels as a result of the Proposed Works against future predicted traffic flows within the Study Area. The Study Area is based on the following roads:

- Quantock Road;
- A39 Homberg Way;
- A38 Bristol Road;
- A38 Taunton Road;
- A38 Bristol Road North;
- A39 between Dunball roundabout and Dunball Interchange; and
- A38 Huntworth Lane.

- 5.11.2. The Study Area has been informed by discussion with Somerset Council and National Highways. The Proposed Works involve the transportation of waste and materials to and from the Site as well as site workers. It is assumed that all required transportation movements for the Proposed Works are undertaken utilising the highway network.

- 5.11.3. The Preparations for Quiescence phase is anticipated to be the worst-case for assessment of impacts on traffic and transport receptors. Approximately 2034 is identified as the peak year for traffic movements and is anticipated to generate approximately 130 vehicle movements per day, comprising 30 additional Heavy Goods Vehicle (HGV) and a net increase of 100 car/Light Goods Vehicle (LGV) movements compared to the existing HPB baseline. The HGV movements from the Proposed Works are caused by:

- movement of Safestore construction materials to site;
- movement of consumables, plant and equipment to site to undertake the Proposed Works;
- the removal of demolition and deconstruction wastes from the Site; and
- the movement of infill material to site to fill voids (should it be identified that it is not possible to retain these voids through the Quiescence phase).

Baseline

- 5.11.4. The baseline assessment for the Study Area was developed using both survey data and a desk study. The desk study included the review of publicly available traffic data, and survey data was collected between 00:00 on Wednesday 6 July 2022 and 23:59 on Tuesday 12 July 2022 from multiple locations to develop a baseline flow.

- 5.11.5. HPB itself provides onsite car parking, with the nearest train station located approximately 18 km away in Bridgwater. There are limited bus services around the Site, and there is no dedicated cycling infrastructure for the Site. However, as part of the HPC construction works, to manage the construction workforce transport movements to the HPC site and reduce trips on the local highway network in the Somerset area, park and ride services have been implemented across four sites (Williton, Cannington, at Junction 23 of the M5, and Junction 24 of the M5)¹¹. The facilities operate seven days per week to accommodate HPC construction project shift patterns.
- 5.11.6. Accident data for the various options for transport routes were examined. Most of the collisions were determined to have been caused by driver negligence and poor driving behaviour so it is concluded that the Study Area does not exhibit any highway issues which need to be targeted with specific casualty reduction measures as part of the development proposal.

Embedded measures

- 5.11.7. Appropriate embedded measures would be incorporated into the Proposed Works including (but not limited to) the following measures:
- specific travel routes set out for deliveries to reduce impact on traffic flows;
 - road safety assessment to inform preferred route selection; and
 - the use of the road works register when planning routes.

Likely significant effects

- 5.11.8. As part of the assessment, trip generation for the entire Preparations for Quiescence phase was forecast and compared to a future baseline. The assessment considered two scenarios for the Preparations for Quiescence phase
- Year 2030 (assuming HPC traffic still on roads); and
 - Year 2034 (peak construction traffic for the Preparations for Quiescence phase, assuming HPC construction finished).
- 5.11.9. The assessment demonstrated that the traffic flow changes on the roads considered due to the Proposed Works traffic are less than 10%, which is within the allowance for daily variation of traffic flows.
- 5.11.10. Due to the low traffic flows associated with the Proposed Works, effects on severance, non-motorised amenity, non-motorised user delay, fear and intimidation on and by road users would be limited and therefore these effects were assessed as negligible and scoped out of further assessment.
- 5.11.11. Road safety assessment of effects identify no underlying highway design and / or safety issues. Due to the level of traffic associated with the Proposed Works and strict routing and timing of the traffic, it is unlikely to cause road safety issues.
- 5.11.12. All effects were determined to be negligible and therefore **Not Significant**.

¹¹ EDF (2011) Hinkley Point C Transport Assessment submitted with the application for development consent. Available at: Microsoft Word - HPC-NNBPEA-U0-000-REP-000109.doc (nationalarchives.gov.uk) (Accessed August 2024).

5.12 People and Communities

- 5.12.1. **Chapter 17: People and Communities** of this ES considers the socio-economic and health effects associated with the Proposed Works, on people, communities and the economy at spatial scales covering:
- National level – England;
 - Regional level –the South West Region; and
 - Local level – Localities within the former Somerset West and Taunton and Sedgemoor administrative area (the “Three Districts”).
- 5.12.2. The assessment covers impacts on employment markets, workers at HPB, the local economy and business, and users of recreational facilities. The magnitude of change experienced by these receptors is expected to be proportional to the change in the number of employees working at the Site, over the period of the Proposed Works. During the Preparations for Quiescence phase, the workforce is expected to be between 220-300 staff, with up to 250 additional contractor personnel depending on the works on site at any given time.
- 5.12.3. While the decommissioning is intrinsic to the use of nuclear technology and a process for which operational sites make early plans, the reduction in workforce over the Preparations for Quiescence phase is estimated as a worst-case for the impacts over all phases of assessment.

Baseline

- 5.12.4. Somerset West and Taunton has a current population of 157,900 which makes up approximately 2.7% of the population in the South West and 0.2% of the population in Great Britain
- 5.12.5. In the national context, the Three Districts are separately assessed and ranked compared to the national total of 317 local authority areas. In this comparison, all three are in a group slightly more deprived than the national average, with West Somerset ranking 142, Taunton Deane 149 and Sedgemoor 121, as defined by the Government’s Index of Multiple Deprivation (IMD). The IMD takes account of components including Income, Employment, Health, Education/Skills, Housing, Geographic Access and Crime.
- 5.12.6. HPB has provided long standing and high value employment opportunities within the local and regional area and is a valuable economic asset for the region. It is one of the large employers in the Three Districts. As of 31 December 2023, the workforce was 453 employees which is taken as the existing level at the time of writing and represents 0.33%¹² of the economically active workforce in the Three Districts. Approximately 66% of the workforce have 10+ years’ service at the Site and almost 90% are resident within areas with TA (Taunton) post codes.
- 5.12.7. Somerset Council’s recent assessment reported in the Recovery and Growth Plan and supporting Economic Somerset Economic Futures¹³ assessment indicates change and growth in the energy, engineering and digital sector as important to the future of the area. It also identifies specific programmes.

¹² Calculated against the total number of individuals employed across all sectors

¹³ Somerset Council (2023). Somerset Economic Futures – Final Report [online]. Available at: [Final report - Post-PMO feedback DRAFT FINAL.pdf \(somerset.gov.uk\)](#) (Accessed August 2024).

- 5.12.8. The proposed Gravity development¹⁴ may provide significant employment in Bridgwater close to the area where many HPB staff currently live. In addition, the new nuclear power plant being built at Hinkley Point (commonly referred to as HPC) provides potential job opportunities in the area according to the skills required.

Embedded measures

- 5.12.9. The Applicant as part of its resource planning for decommissioning will:
- Undertake career aspirational discussions with staff.
 - Offer contractual redundancy packages.
 - Assist workers with necessary retraining to facilitate suitability for decommissioning at HPB roles or alternative roles within the Applicant organisation.
 - Specific collaboration with HPC on deployment opportunities
 - Work with third-parties to advertise new opportunities for staff.
 - Continue to support staff with post-employment references for alternative posts.

Likely significant effects

- 5.12.10. Throughout the Preparations for Quiescence, Quiescence and Final Site Clearance phases, effects in relation to the change in activities being undertaken on site and the effect on employment markets and the economy; economic activity and business opportunities in the local area and activities within the Works Area which may affect onshore and offshore users near the Site were considered further.
- 5.12.11. With the exception of effects on workers at HPB, all residual effects arising from the Proposed Works are considered to be **Not Significant**.
- 5.12.12. Likely **Significant** effects were identified in relation to workers at HPB, as workers may experience variable periods of unemployment and associated health impacts. Whilst significant effects are anticipated, employees are skilled and experienced, and there are potential future employment opportunities in the area e.g. at HPC and Gravity development), and/or may have the option of early retirement according to personal circumstances.

5.13 Major accidents and disasters

- 5.13.1. **Chapter 18: Major Accidents and Disasters** of the ES considers the potential effects of major accidents and disasters that could arise throughout all phases of the Proposed Works.
- 5.13.2. A 'major accident' is defined as an unintended event caused by a man-made activity or asset that leads to serious damage to receptors, either immediate or delayed. The term 'disaster' is defined as a natural occurrence that leads to serious damage to receptors again either immediate or delayed. Major accidents or disasters can lead to the loss of life and injury in large numbers, and/or major and long-term damage to environmental or historic features of high importance.

¹⁴ BBC (28 February 2023). Tata confirms Somerset will host £4bn battery factory [online]. Available at: <https://www.bbc.co.uk/news/uk-england-somerset-68412570> (Accessed April 2024).

- 5.13.3. The assessment has looked at all realistic ‘worst case’ hazards that may lead to a major accident or disaster. The assessment is risk-based as major accidents and disasters are infrequent events. Therefore, this assessment takes account of how likely the potential major accident or disaster is to occur, as well as the level of damage or casualty it can cause.
- 5.13.4. The assessment has identified potential major accident and disaster sources, the human and environmental receptors and infrastructure close to the Works Area, and the route or ‘pathways’ by which a source may affect each of these receptors. An assessment has then been made of the likelihood of it occurring, and the damage or injury it could cause, to understand which potential.
- 5.13.5. The approach taken in this assessment has been aligned to guidance created by the European Commission.

Baseline

- 5.13.6. The baseline assessment has been undertaken by reviewing the internal infrastructure and contents of the Site, as well as the external manmade and natural environment conditions. The design of the power station and its locality allows it to withstand extreme weather conditions. This is assisted by numerous emergency response arrangements that are integrated with the local authority that help to prevent incidents affecting receptors.
- 5.13.7. Within the future baseline, construction of HPC will finish, followed by commissioning and operation. The nature and extent of the major accidents from the HPC facilities which could affect the workforce of the Proposed Works, and vice versa, will change as the design progresses. The interfaces and potential impacts will need to be managed throughout the Proposed Works.

Embedded measures

- 5.13.8. Appropriate embedded measures would be incorporated into the Proposed Works including (but not limited to) measures including:
- Maintaining the Integrated Management System (IMS) to an appropriate standard by the Site Licensee for the full duration of the Proposed Works.
 - Maintaining the licensing requirements which include maintaining a suitable Safety Case in accordance with the Nuclear Installations Act and approved Security Plan in accordance with Nuclear Industries Security Regulations.
 - Designing structures to withstand external loads, including wind or precipitation, which will be maintained up to the point of decommissioning that structure, considering any foreseeable changes to design loads as a result of climate change.
 - Ensuring through its contractual arrangements that any contractor appointed to deliver the Proposed Works has suitable management systems in place to ensure compliance with all regulatory requirements.
 - Adapting 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.

- Ensuring all activities are subject to a suitable and sufficient risk assessment and with full consideration of the hierarchy of controls to ensure that the residual risk arising from all major accidents and disasters is reduced to As Low As Reasonably Practicable.
- Ensuring the emergency response procedures will consider the potential for releases of hazardous materials and will define the actions to be taken to minimize the risk arising from potential releases.

Assessment of likely significant effects

- 5.13.9. When the embedded environmental measures to prevent, control and limit the potential for major accidents and disasters during the lifetime of Proposed Works were taken into account, the likelihood of a major accident and disaster occurring will be low enough that there are **No Significant Effects** arising from major accident and disasters. This is due to the measures in place, including safety systems, emergency plans, as well as the low frequency of fires, and separation from human populations.

5.14 Conventional Waste

- 5.14.1. **Chapter 19: Conventional Waste** of the ES considers the impacts of conventional waste (i.e. non-radiological waste) being generated by the Proposed Works on the ability and capacity of existing waste management infrastructure to accommodate this waste. Further detail on radioactive waste is provided in **Section 5.15: Radioactive waste and discharges** of this NTS. The Study Area used in this assessment is the administrative area of the appropriate Waste Planning Authority (WPA), which in this case is Somerset Council.
- 5.14.2. The types of waste considered in this assessment include:
- excavation and demolition wastes;
 - construction waste (i.e. construction of waste processing facilities and Safestore); and
 - waste generated by the decommissioning staff (e.g. food waste, general refuse etc.).
- 5.14.3. These wastes are expected to be either non-hazardous or special/ hazardous.
- 5.14.4. The Preparations for Quiescence phase is the main focus of the assessment of conventional waste impacts where more detail is known, including waste arisings per year of works during this phase.
- 5.14.5. Activities during the Quiescence phase are expected to generate minimal conventional waste, as works are limited to activities such as routine maintenance of the Safestore.
- 5.14.6. Waste arisings during the Final Site Clearance phase would be generated by the dismantling of the Safestore and delivery of final site clearance activities.
- 5.14.7. It is anticipated that some of the inert demolition material generated during the Preparations for Quiescence and Final Site Clearance phases will be suitable for use as infill material for voids.

Baseline

- 5.14.8. Conventional waste information was obtained from publicly available information and from local planning authorities. Currently, all conventional waste is sent off site for reuse, recycling or final disposal; there are 106 operational waste facilities in the Somerset area (of which 6 can manage hazardous wastes), with a further 13 permitted.

- 5.14.9. The Hinkley Point B (HPB) Nuclear Power Station produces a limited amount of non-radioactive wastes each year. The site operates with a waste management procedure that form part of an IMS and has a dedicated Site Waste Co-Ordinator. Similar arrangements under the NRS integrated management system will be adopted. All conventional waste presently sent off-site for reuse, recycling or final disposal is despatched to facilities primarily located either within the Waste Planning Authority (WPA) area catchment (i.e. Somerset), or for more specialist wastes including hazardous materials, within the wider region (i.e. the South West).

Embedded measures

- 5.14.10. Conventional waste will be managed in accordance with the waste hierarchy to minimise the volume of waste generated by the Proposed Works.
- 5.14.11. Appropriate embedded measures would be incorporated into the Proposed Works including (but not limited to) adherence to waste management procedures and preparation of site waste management plans (SWMP) in advance of certain works commencing. This will set out the approach to reduce the amount of waste generated where possible, maximise the reuse and recycling of waste, and then only send waste for final disposal if all other options have been used up.

Assessment of likely significant effects

- 5.14.12. It is anticipated that the Proposed Works during the Preparations for Quiescence phase would have minor to negligible effects on existing waste management infrastructure (**Not Significant**) as a result of the embedded measures and the anticipated waste quantities to be disposed of off-site being low.
- 5.14.13. It also concludes that effects during the Quiescence and Final Site Clearance phases would similarly be not significant based on anticipated waste arisings for these later phases.

5.15 Radioactive Waste and Discharges

- 5.15.1. **Chapter 20: Radioactive Waste and Discharges** of the ES provides an overview of the baseline and the EIADR consenting requirements as they apply to the management of radiological waste and discharges.
- 5.15.2. Whilst radiological waste and discharges will be generated during the Proposed Works, the management of these wastes and discharges was scoped out of ES assessment at the EIADR Scoping stage. The reasons for this are highlighted below:
- The HPB Environmental Permit (EPR/CB3735DT) issued under the Environmental Permitting (England and Wales) Regulations 2016 (as amended), sets out limits and conditions relating to the disposal of radioactive wastes including those relating to wastes arising during decommissioning. To satisfy the conditions of this permit, waste will be managed utilising Best Available Techniques (BAT) in order to minimise the volume and activity of waste discharges to the environment. The permitting regime ensures that effects from radioactive discharges and disposals are tolerable and acceptable.

- Data on total volumes of waste and materials arising at HPB are provided to the UK Government sponsored Radioactive Waste & Materials Inventory (UKRWI), on a three yearly basis. The UKRWI helps the UK plan safe and efficient management routes for radioactive waste and is used to support the planning, operation and performance of supply chain waste management facilities. By providing data to the UKRWI, HPB helps to ensure that there is sufficient availability in the UK supply chain for its wastes. HPB will continue to forecast waste arisings from decommissioning and will provide data on its forecasted waste streams throughout the duration of the Proposed Works, thus ensuring its wastes are considered in the planning and operation of the UK's radioactive waste facilities.
- ILW is subject to an assessment process which helps minimise its impact on the capacity and function of the future GDF for ILW. The process requires a Letter of Compliance for each ILW stream at each site which confirms its acceptability for future management arrangements and allows Nuclear Waste Services to plan for sufficient capacity and timely availability for disposal.
- The NDA, the Applicant and NRS have come to an agreement that ILW requiring long-term storage generated in the Preparations for Quiescence phase can be stored in the ILW Store at the HPA site utilising existing capacity.
- Relevant guidance¹⁵ sets out the standards that must be met to release LAW from the Nuclear Site Licence and the associated conditions of its EASR permit. On-site disposal of LAW would only be considered should BAT assessments conclude it is safe to do so and is the preferred method of managing LAW disposal from the Proposed Works. However, this does not form part of the current proposals.
- In addition to the regulatory expectations and requirements discussed above, an Integrated Waste Strategy (IWS) will be prepared which will help to set out how waste will be managed in accordance with regulatory expectations. A Radioactive Waste Management Case (RWMC) will be used to describe the longer-term safety and environmental performance of the planned management of specific waste(s) and provide a transparent view of optimised radioactive waste management, compliance with regulatory requirements, policy, national and international standards and how waste management operations are integrated across the lifetime plans for the waste and/or Site as a whole.

5.16 Cumulative Effects Assessment

- 5.16.1. The Cumulative Effects Assessment is divided into two different components, the first is where potentially more than one environmental impact identified by the environmental aspect chapters affects a singular receptor (intra-project effects), and the second is when a receptor is affected by a combination of different projects and the Proposed Works (inter-project effects). The local planning authority (Somerset Council) has been consulted to identify potential projects that may interact with the same receptors as HPB decommissioning. Full details of the Cumulative Effects assessment can be found in **Chapter 21: Cumulative Effects Assessment** of the ES.

¹⁵ SEPA, the Environment Agency and Natural Resources Wales (2018). The Management of Radioactive Waste from Decommissioning of Nuclear Sites: Guidance on Requirements for Release from Radioactive Substances Regulation. (Online) Available at: <https://www.sepa.org.uk/media/365893/2018-07-17-grr-publication-v1-0.pdf> (Accessed August 2024).

Baseline

- 5.16.2. The baseline identified for the intra-project cumulative effects is contained within the individual environmental aspect chapters already described.
- 5.16.3. For inter-project cumulative effects, a list of other promoted schemes and developments was collated via a review of other planning applications, planning permissions, and allocated sites within the local authority area across a defined geographical area. Somerset Council was consulted on this list to ensure it did not exclude any developments which may interact with the same receptors as those considered under each environmental aspect.

Embedded measures

- 5.16.4. Embedded environmental measures are those identified within the individual environmental aspect chapters.

Assessment of likely significant effects

- 5.16.5. Each environmental aspect chapter has considered the 'intra' and 'inter' project effects associated with that environmental aspect.

Intra-project effects

- 5.16.6. The assessment considers the scenario where a single receptor is potentially affected by more than one environmental impact. A combination of impacts from changes to traffic and transport, air quality, noise and vibration, and employment during the Preparations for Quiescence phase were identified as having the potential to have significant cumulative impacts on workers at HPB, HPA, HPC power stations. However, these effects were identified as temporary and only short lived, with their impact likely being reduced with the use of embedded environmental and good practice measures utilised during the Proposed Works.

Inter-project effects

- 5.16.7. Consideration was also given to the effects which could be created as a result of the Proposed Works cumulatively with other projects proposed in a 5 km search radius. Thirty-seven other developments were identified within the 5 km radius where potential cumulative effects could occur. Significant cumulative effects were identified in **Section 5.9: Landscape and visual** of this NTS, with respect to the Proposed Works as a consequence of the construction and operation of HPC:
- landscape character (Eastern Lowlands Sub Area, the Coast (St Audries to Hinkley Point) Sub Area and Wick Moor and Coast Sub Area); and
 - views (residents at Stolford, users of the King Charles III England Coast Path / West Somerset Coast Path, users of the Castles & Coast Way, users of local PRow Networks A, B, C and D, users of Open Access Land and users of Wick Moor Drove) as a consequence of the construction and operation of HPC.
- 5.16.8. The methodology undertaken for cumulative assessment within LVIA does however make clear that cumulative effects are primarily due to the other projects, and not as a result of HPB decommissioning. These effects were on receptors including the local landscape character area, and various visual receptors in the locality.



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