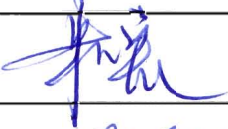




Revision	Approved by	Number of Pages
000		20
Approval Date		
 General Nuclear System Ltd.		
UK HPR1000 GDA Project		
Document Reference:	HPR/GDA/PCER/0002	
<p>Title:</p> <p style="text-align: center;">Pre-Construction Environmental Report</p> <p style="text-align: center;">Chapter 2</p> <p style="text-align: center;">Generic Site Description</p>		
<p>This document has been prepared on behalf of General Nuclear System Limited (GNS) with the support of China General Nuclear Power Corporation (CGN) and Électricité de France S.A. (EDF).</p> <p>Although due care has been taken in compiling the content of this document, neither GNS, CGN, EDF nor any of their respective affiliates accept any liability in respect to any errors, omissions or inaccuracies contained or referred to in it.</p>		

DISTRIBUTION LIST

Recipients	Cross Box
GNS Executive	<input type="checkbox"/>
GNS all staff	<input type="checkbox"/>
GNS and BRB all staff	<input checked="" type="checkbox"/>
CGN	<input checked="" type="checkbox"/>
EDF	<input checked="" type="checkbox"/>
Regulators	<input checked="" type="checkbox"/>
Public	<input checked="" type="checkbox"/>

MODIFICATION RECORD

Revision	Section	Page	Modification
000	ALL	ALL	First Issue

UK HPR1000 GDA	Pre-Construction Environmental Report Chapter 2 Generic Site Description	UK Protective Marking: Not Protectively Marked	
		Rev: 000	Page: 1 / 17

TABLE OF CONTENTS

2.1 List of Abbreviations and Acronyms.....	2
2.2 Introduction	2
2.3 Regulatory Context	3
2.4 Characteristics of the Generic Site.....	4
2.4.1 Overview of Potential Site.....	4
2.4.2 The Methodologies Used in Dose Assessment	7
2.4.2.1 IRAT	7
2.4.2.2 PC-CREAM 08.....	7
2.4.2.3 ADMS 5.....	7
2.4.2.4 ERICA	7
2.4.2.5 Ar-Kr-Xe Tool.....	8
2.4.3 Terrestrial Ecosystem.....	8
2.4.3.1 Meteorological Parameters	8
2.4.3.2 Type of Land Use	9
2.4.3.3 Habit Data for Gaseous Discharges.....	9
2.4.4 Aquatic Ecosystem.....	12
2.4.4.1 Habit Data for Liquid Discharges.....	13
2.4.5 Human Population	14
2.4.6 Sensitive Areas and Species.....	14
2.5 Conclusions	15
2.6 References	15

UK HPR1000 GDA	Pre-Construction Environmental Report Chapter 2 Generic Site Description	UK Protective Marking: Not Protectively Marked	
		Rev: 000	Page: 2/17

2.1 List of Abbreviations and Acronyms

ADMS	Atmospheric Dispersion Modelling System
EA	Environment Agency (UK)
ERICA	Environmental Risk from Ionising Contaminants: Assessment and Management
GDA	Generic Design Assessment
IRA	Initial Radiological Assessment
IRAT	Initial Radiological Assessment Tool
NHB	Non-Human Biota
P&ID	Process and Information Document for Generic Assessment of Candidate Nuclear Power Plant Designs
PCER	Pre-Construction Environmental Report
PCSR	Pre-Construction Safety Report
UK HPR1000	UK version of the Hua-long Pressurised Reactor

2.2 Introduction

According to the requirements set out in the *Process and Information Document for Generic Assessment of Candidate Nuclear Power Plant Designs (P&ID)*, Reference [1], published by the Environment Agency (EA), there is a need to assess the radiological impact to members of the public and the environment at a generic site. This chapter provides the generic site characteristics used for radiological dose assessment, including terrestrial generic site characteristics, aquatic generic site characteristics and definitions of human and non-human receptors that could be exposed to radioactivity discharged from the UK version of the Hua-long Pressurised Reactor (UK HPR1000). Together, these descriptions help to fulfil the requirements in Reference [1].

This fundamental objective is that the generic UK HPR1000 could be constructed, operated and decommissioned in the UK, on a site bounded by the generic site envelope, in a way that is safe, secure and protects the environment. This is supported by the high level claim of the Pre-Construction Environmental Report (PCER) Chapter 2, which in turn, aligns with the route map to provide information describing key aspects of a generic UK site that bounds the suitable locations for a nuclear power plant with the generic site characteristics of the UK HPR1000, Reference [2].

This chapter supports the high level claim with the Level 2 Claim 1.2: The characteristics adopted in the environmental assessment reflect those of the Generic

UK HPR1000 GDA	Pre-Construction Environmental Report Chapter 2 Generic Site Description	UK Protective Marking: Not Protectively Marked	
		Rev: 000	Page: 3/17

Site.

The assessment methods used to estimate the potential radiological impact of the reactor design on the environment are provided in a separate part of this PCER (see PCER Chapter 7).

This chapter has interfaces with the following chapters:

T- 2.2-1 Interface with Other Chapters

Chapter	Interface Relationship
PCER Chapter 7 Radiological Assessment	This chapter provides generic site data which supports the radiological assessment detailed in PCER Chapter 7.

The site characteristics related to evaluating the radiological impacts to the public and the environment from the UK HPR1000 is included in the following sections:

a) Sub-chapter 2.1 List of Abbreviations and Acronyms

This section lists the abbreviations and acronyms that are used in the PCER Chapter 2.

b) Sub-chapter 2.2 Introduction

This section gives a brief introduction to this chapter.

c) Sub-chapter 2.3 Regulatory Context

This section provides the production requirements for this chapter.

d) Sub-chapter 2.4 Characteristics of the Generic Site

This section provides a description of the generic site and the detailed parameters of terrestrial ecosystem, aquatic ecosystem, human population, sensitive areas and species.

e) Sub-chapter 2.5 Conclusions

This section presents concluding marks.

f) Sub-chapter 2.6 References

This section lists the supporting references of this chapter.

2.3 Regulatory Context

The EA regulates nuclear licenced sites, primarily under *The Environmental Permitting (England and Wales) Regulations 2016 (SI 2016 No.1154)*, Reference [3]. The information which is needed to be included in a Generic Design Assessment (GDA) submission is specified in the P&ID, Reference [1].

The P&ID sets the following requirement with respect to the Generic Site Description,

UK HPR1000 GDA	Pre-Construction Environmental Report Chapter 2 Generic Site Description	UK Protective Marking: Not Protectively Marked	
		Rev: 000	Page: 4/17

Reference [1]:

General information relating to the requesting party and the design.

Include:

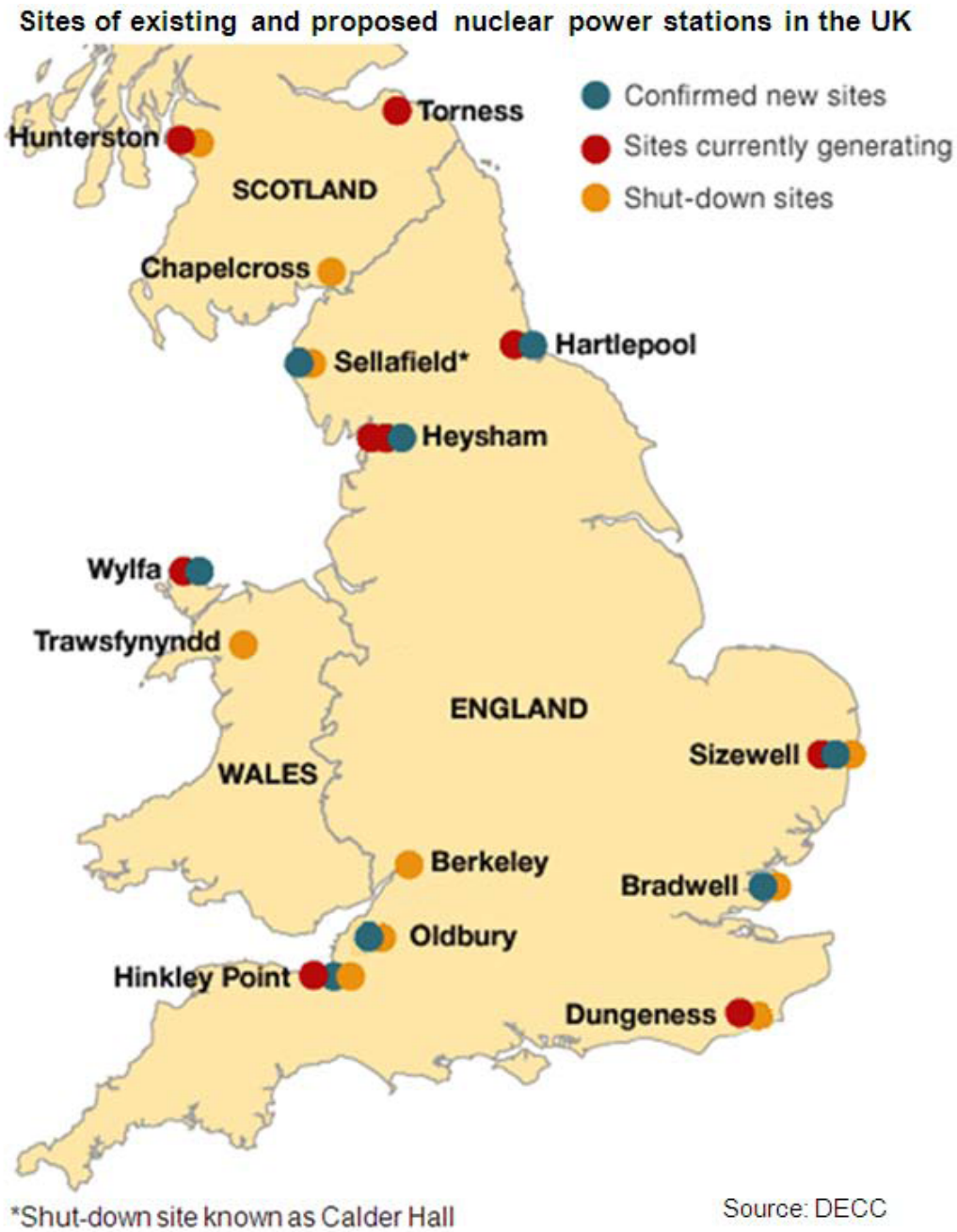
- *Description and characteristics of the generic site (or sites) that the requesting party will use to provide its dose assessment (see Chapter 7). A range of generic sites might be chosen with coastal, estuarine and inland characteristics.*

2.4 Characteristics of the Generic Site

2.4.1 Overview of Potential Site

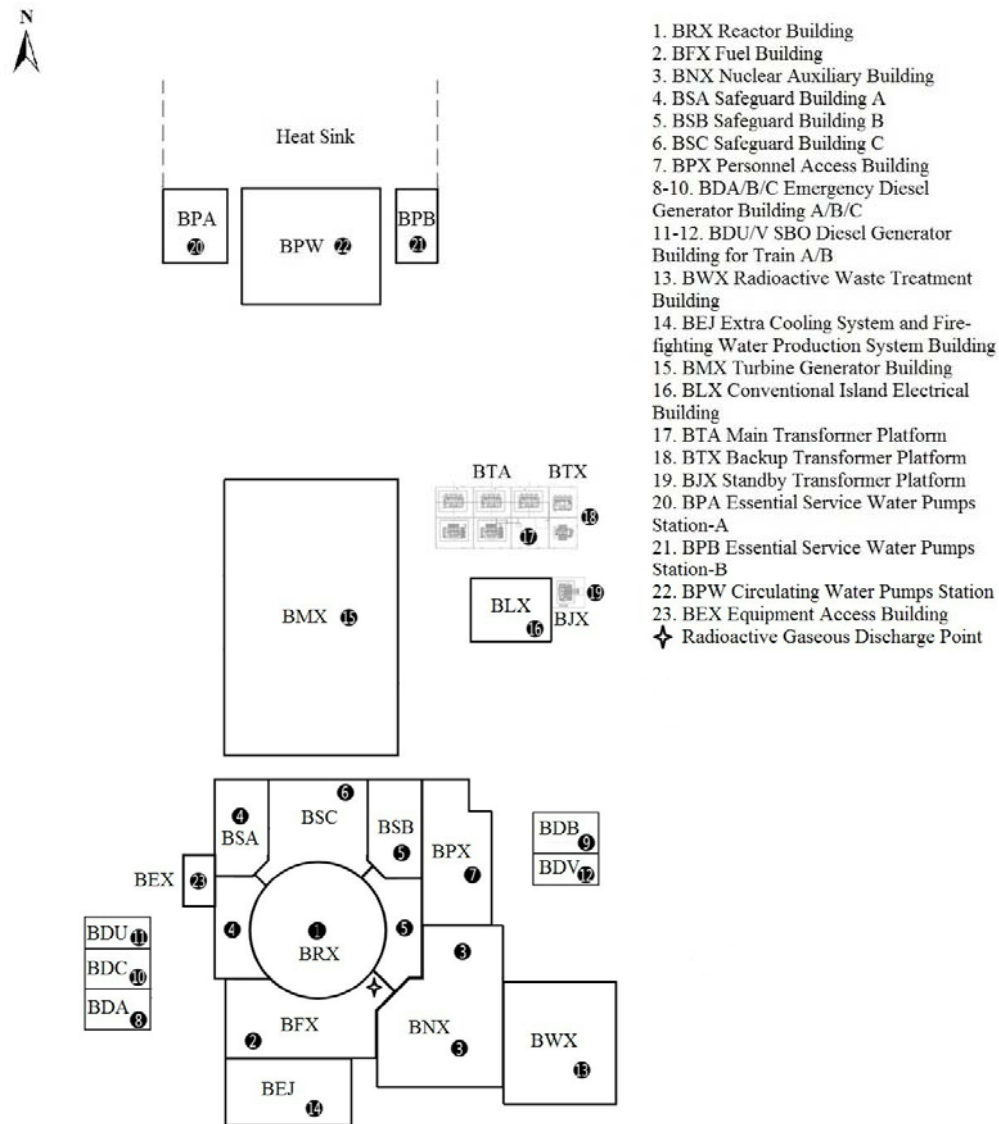
The UK requires new nuclear power stations to provide reliable electricity supplies and a secure and diverse energy mix as the UK makes the transition to a low carbon economy. In the *UK Governments the National Policy Statement for Nuclear Power Generation (EN-6)*, Reference [4], eight potential sites have been identified which are located on the coast or on large estuaries. The parameters used in this chapter are based primarily on the EA's recommended publications and guidelines, which are generic site data and are suitable for potential sites identified in EN-6, Reference [4]. The F-2.4-1 shows nuclear power stations in the UK of which the 8 blue dots are the confirmed potential sites indicated in the EN-6. Meanwhile the orange dots mean the shut-down sites and the red dots mean the currently generating sites.

The target site for UK HPR1000 is Bradwell in Essex, the site is in a semi-urban location with no major road or rail links to the site. The surrounding area is mainly low-lying agricultural land. The site is located on a layer of 'London Clay' which is considered a non-aquifer.



F-2.4-1 Proposed Sites for New Nuclear Power Stations (Blue dot), Reference [5]

The UK HPR1000 adopts a single-unit layout with no planned releases to groundwater. F-2.4-2 shows the general layout of main buildings of the UK HPR1000 Nuclear Island and Conventional Island, *Pre-Construction Safety Report (PCSR) Chapter 2 General Plant Description*, Reference [6].



F-2.4-2 General Layout of the UK HPR1000

The main assumptions about the generic site are:

- The site is in an Estuarine/Marine Environment and the topography of the site is flat;
- There is no water extraction from aquifers and no standing water at the site;
- There is no freshwater bodies on or adjacent to the site;
- The nearest human receptors are assumed to be a fisherman family and local resident family;
- Discharge routes are assumed to be gaseous aerial discharges and liquid discharges to the coastal/estuarine environment;

UK HPR1000 GDA	Pre-Construction Environmental Report Chapter 2 Generic Site Description	UK Protective Marking: Not Protectively Marked	
		Rev: 000	Page: 7/17

2.4.2 The Methodologies Used in Dose Assessment

Multiple assessment tools have been selected to ensure all the dose assessment requirements of the P&ID are fulfilled. Some default parameters reference to these assessment tools.

2.4.2.1 IRAT

The Initial Radiological Assessment Tool (IRAT) methodology, Reference [7] and [8], is a staged approach developed by the EA to assess doses to the public. The method is based on conservative assumptions to ensure that doses are not underestimated but without creating unduly unrealistic scenarios.

This initial radiological assessment methodology should be applied in the following three main stages:

- a) Stage 1 – Initial radiological assessment using default data. If assessed dose is > 20 $\mu\text{Sv/y}$, then proceed to Stage 2;
- b) Stage 2 – Initial radiological assessment using refined data. If assessed dose is > 20 $\mu\text{Sv/y}$, then proceed to Stage 3;
- c) Stage 3 – Determine need for separate site-specific assessment.

Stage 1 and 2 are carried out in PCER Chapter 7 Radiological Assessment using default data in Reference [7] and [8]. The Stage 3 assessment which is needed to base on more realistic site condition is carried out in PCER Chapter 7. Bradwell is the potential site and the associated parameters are relatively conservative among the all potential sites, Reference [9]. So the parameters of Bradwell are used to reflect the condition of potential site when carrying out the Stage 3 assessments.

2.4.2.2 PC-CREAM 08

PC-CREAM 08, Reference [10], is a computer code which is selected for assessment of representative person dose, Stage 3 assessments as described in Section 2.4.2.1, accumulation within the environment and to support short-term dose assessment work. PC-CREAM 08 is a well-developed and established dose modelling tool within the UK.

2.4.2.3 Atmospheric Dispersion Modelling System (ADMS) 5

ADMS 5 is a practical, short-range dispersion model that simulates a wide range of buoyant and passive releases to atmosphere. It is used to simulate atmospheric diffusion, Reference [11]. It is also capable of calculating the cloud gamma dose rate.

2.4.2.4 Environmental Risk from Ionising Contaminants: Assessment and Management (ERICA)

ERICA, Reference [12], is regularly used within the UK for conducting dose assessments to Non-Human Biota (NHB). It is a software system that has a tiered

approach to assessing the radiological risk to terrestrial, freshwater and marine biota.

2.4.2.5 Ar-Kr-Xe Tool

ERICA does not contain data for noble gases, therefore the Ar-Kr-Xe tool, Reference [13], was used to supplement the data from the ERICA.

This tool is a variant to the R&D 128 tool developed by the EA. It includes the ability to calculate doses for all the environmentally relevant Ar, Kr and Xe isotopes and covers the original R&D 128 organisms and the ICRP reference animals and plants that the ERICA tool considers.

2.4.3 Terrestrial Ecosystem

The site condition data used at this stage is mainly derived from a review of recommended values in UK publications. The environment around the nuclear power station is described in following sub-chapters.

2.4.3.1 Meteorological Parameters

The meteorological data is used for the gaseous pathway impact assessment. There is a difference between data used for annual dose assessment and short term dose assessment.

The parameters which are used during the GDA phase to define the site characteristics are presented in T-2.4-1 below.

T-2.4-1 Atmospheric Conditions Used for Gaseous Pathway Assessments in Reference [9]

Parameter	Proposed Value for Annual (Stage 1&2)and Collective Doses	Proposed Value for Annual (Stage 3)	Proposed Value for Short-term Release Assessment
Pasquill Stability	50%D*	65%D [∞]	D
Wind Speed at 10 m height (m/s)	5	5	5
Wind Rose	Uniform	Uniform	Wind blows towards critical group and food crop
Washout coefficient (1/s)	1.0×10^{-4} , 0 for noble gases	1.0×10^{-4} , 0 for noble gases	1.0×10^{-4} , 0 for noble gases
Boundary layer depth (m)	---	---	800

* Data taken from Reference [8]

[∞] Data taken from Reference [14]

UK HPR1000 GDA	Pre-Construction Environmental Report Chapter 2 Generic Site Description	UK Protective Marking: Not Protectively Marked	
		Rev: 000	Page: 9/17

2.4.3.2 Type of Land Use

It is assumed that an agricultural area is present around the UK HPR1000 site, which is typical of the 8 potential sites identified in EN-6, Reference [4]. The surface roughness value used for defining agricultural areas is 0.3 and the soil type is generic wet. This soil type reflects that of a London Clay, which is consistent with the parameters selected for soil bearing capacity in *PCSR Chapter 3 Generic Site Characteristics*, Reference [15].

2.4.3.3 Habit Data for Gaseous Discharges

Habit data for the individuals are used to estimate the intakes of radionuclides and the external dose respectively. The habit data relates to the exposure pathways from releases to air of the local resident family exposure group. These habits can vary widely from one individual to another and also in the same individual from one time to another. Different sets of habit data (average and critical) are to be considered.

Exposure occurs through:

- a) Inhalation of radionuclides in the effluent plume;
- b) External irradiation from radionuclides in the effluent plume and deposited to the ground; and,
- c) Consumption of terrestrial food incorporating radionuclides deposited to the ground.

The habit data are summarised in T-2.4-2 to T-2.4-4 below. The terrestrial food ingestion rates are the default data used in PC-CREAM 08. The data is general and is considered adequate in circumstances where doses are not expected to approach limits or constraints, and where regional variations in habits are likely to be small, Reference [10].

Doses to people indoors will be significantly lower owing to shielding provided by building structures. The cloud gamma values of 0.2 for general assessments are considered typical for EU countries. It is not considered appropriate to set location factors for external irradiation from electrons (cloud beta) in PC-CREAM 08 as the exposure is only from activity in the immediate vicinity and the activity concentration in air is considered to be the same indoors and outdoors. So the indoor location factors for inhalation and beta irradiation from the cloud are currently set as 1. In PC-CREAM 08, the gamma dose rate indoors from deposited activity is assumed to be reduced by a factor of 0.1, Reference [10].

When more survey information is available and more conservative assumptions are required, indoor occupancy which is significant age-dependence of 80% for children and 90% for infant is used. The adults have indoor occupancy approaching 50%, Reference [16].

T-2.4-2 and T-2.4-3 present the critical and average levels of the terrestrial food consumption rates which are taken from PC-CREAM 08.

The relative contributions of the food consumption rates vary considerably between individuals with distinct regional variations. The appropriate food consumption rates are determined according to the overall objective of the assessment. The average intake rate is used to determine the dose to average individuals. The critical group figures are required for dose or risk estimates for comparison with limits or constraints. The 97.5th percentile data is appropriate for most assessment purposes where critical groups are considered, and this approach is consistent with the one endorsed by the Department of Health, Reference [16].

T-2.4-2 Habit Data of Local Resident Family (Critical Data) in Reference [9] and Reference [10]

	Adult	Child	Infant
Food Consumption Rates (kg/y)			
Green vegetables	80	35	15
Root vegetables	130	95	45
Fruit	75	50	35
Grain	100	75	30
Sheep meat	25	10	3
Sheep liver	10	5	2.75
Cow meat	45	30	10
Cow liver	10	5	2.75
Cow milk	240	240	320
Cow milk products	60	45	45
Breathing rates (m³/h)	1.69	0.87	0.31
Occupancy at habitation (h/y)	8760	8760	8760
Fraction of time spent indoors	0.5	0.8	0.9
Location factor cloud gamma[*]	0.2	0.2	0.2
Location factor cloud beta[*]	1	1	1
Indoor dose reduction factor for inhalation[*]	1	1	1
Shielding factor from deposited radionuclides[*]	0.1	0.1	0.1

* Data taken from Reference [10]

T-2.4-3 Habit Data of Local Resident Family (Average Data) in Reference [9] and Reference [10]

	Adult	Child	Infant
Food Consumption Rates (kg/y)			
Green vegetables	35	15	5
Root vegetables	60	50	15
Fruit	20	15	9
Grain	50	45	15
Sheep meat	8	4	0.8
Sheep liver	2.75	1.5	0.5
Cow meat	15	15	3
Cow liver	2.75	1.5	0.5
Cow milk	95	110	130
Cow milk products	20	15	15
Breathing rates (m³/h)	0.92	0.64	0.22
Occupancy at habitation (h/y)	8760	8760	8760
Fraction of time spent indoors	0.5	0.8	0.9
Location factor cloud gamma *	0.2	0.2	0.2
Location factor cloud beta *	1	1	1
Indoor dose reduction factor for inhalation *	1	1	1
Shielding factor from deposited radionuclides *	0.1	0.1	0.1

* Data taken from Reference [10]

T-2.4-4 Habit Data Used for Short Term Assessment, Reference [16] and [17]

	Adult	Child	Infant
Food Consumption Rates (kg/y)*			
Green vegetables	80	35	15
Root vegetables	130	95	45
Fruit	75	50	35
Sheep meat	25	10	3
Sheep liver	10	5	2.75
Cow meat	45	30	10
Cow liver	10	5	2.75
Milk	240	240	320
Milk products	60	45	45
Breathing rates (m³/h)[∞]	1.2	0.87	0.31
Fraction of time spent indoors[∞]	0.5	0.8	0.9

	Adult	Child	Infant
Location factor cloud gamma[∞]	0.2	0.2	0.2
Location factor cloud beta[∞]	1	1	1
Indoor dose reduction factor for inhalation[∞]	1	1	1
Shielding factor from deposited radionuclides[∞]	0.1	0.1	0.1

* Data taken from Reference [16]

[∞] Data taken from Reference [17]

For the short term assessment, it is considered that grain in the UK is not grown, milled and consumed on a very local scale. The local individuals will not produce milk products themselves and consume them in significant quantities, Reference [11].

The direct radiation from the source on the site is included within annual dose assessment. The layout of the UK HPR1000 is not determined at present, so the distance of direct radiation from the buildings which contain radioactive substances to the members of the public who spends 100% of their time at that location is assumed as 100 m to ensure the dose assessment is conservative. The habit data used for direct radiation assessment, Reference [8], is presented in T-2.4-5.

T-2.4-5 Habit Data Used for Direct Radiation Assessment

Parameter	Proposed Value		
	Adult	Child	Infant
Fraction in Local	1	1	1
Shielding factor for being indoors	0.1	0.1	0.1
Shielding factor for being outdoors	1	1	1
Fraction of time spent indoors	0.5	0.8	0.9
Fraction of time spent outdoors	0.5	0.2	0.1

2.4.4 Aquatic Ecosystem

An assumption is made that the site is coastal in nature and radioactive discharges will be made to a marine or estuarine environment. The summarised data is relevant to the characteristics of the coast.

Local compartment data has been selected that reflects the conditions adjacent to the Bradwell site. This has been selected as it is deemed more representative of the location the UK HPR1000 is most likely to be operated at. It is also one of the lowest values showing less dispersion and therefore a level of conservatism. A summary of the proposed parameters for the UK HPR1000 local compartment are provided in T-2.4-6 below.

T-2.4-6 Local Compartment Data Used in Fisherman Family Assessment in Reference [9] and [10]

Parameter	Stage 1	Stage2	Stage 3
Volume (m ³)	1.0 × 10 ⁸	2.0 × 10 ⁸	2.0 × 10 ⁸
Depth (m)	10	10	10
Coastline length (km)	10	10	10
Volumetric exchange rate (m ³ /y)	3.2 × 10 ⁹	4.1 × 10 ⁹	4.0 × 10 ⁹
Suspended sediment load (t/m ³)	2.0 × 10 ⁻⁴	2.0 × 10 ⁻⁴	2.0 × 10 ⁻⁴
Sedimentation rate (t/m ² /y)	1.0 × 10 ⁻⁴	1.0 × 10 ⁻⁴	1.0 × 10 ⁻⁴
Density of dry sediment particles (t/m ³)	2.6	2.6	2.6
Bioturbation rate (coastal water) (m ² /y)	3.6 × 10 ⁻⁵	3.6 × 10 ⁻⁵	3.6 × 10 ⁻⁵
Diffusion rate (sediment diffusion coefficient) (m ² /y)	3.15 × 10 ⁻²	3.15 × 10 ⁻²	3.15 × 10 ⁻²

2.4.4.1 Habit Data for Liquid Discharges

The fisherman family receive doses from:

- External irradiation from radionuclides deposited in shore sediments;
- The consumption of seafood incorporating radionuclides released from nuclear power plant.

The relevant exposure pathways are taken from habit data presented in T-2.4-7 and T-2.4-8. The generic intake rates presented are based on ingestion data in the UK, Reference [16].

T-2.4-7 Habit Data for Fisherman Family (Critical Data) in Reference [9]

	Adult	Child	Infant	Fraction in compartment	
				Local	Regional
Food Consumption Rates (kg/y)					
Fish	100	20	5	0.1	0.9
Crustaceans	20	5	0	1	0
Molluscs	20	5	0	1	0
Seaweed	0	0	0	1	0
Occupancy on Beach (h/y)	2000	300	30	1	0

T-2.4-8 Habit Data for Fisherman Family (Average Data) in Reference [9]

	Adult	Child	Infant	Fraction in compartment	
				Local	Regional
Food Consumption Rates (kg/y)					
Fish	15	6	3.5	0.1	0.9
Crustaceans	1.75	1.25	0	1	0
Molluscs	1.75	1.25	0	1	0
Seaweed	0	0	0	1	0
Occupancy on Beach (h/y)	2000	300	30	1	0

2.4.5 Human Population

The EA's initial radiological assessment methodology, Reference [7] and [8], is based on exposure pathways and groups which are likely to be the worst affected for a particular discharge route. The receptors for humans have been taken from the EA's *Initial Radiological Assessment Methodology (IRA)*, Reference [7]. For the IRA, it is assumed that the most exposed groups include:

- a) Local resident family;
- b) Fisherman family.

The local population distribution is not required for radiological dose assessment at this stage (site-specific data will be used to inform a dose assessment once a suitable site has been selected). It is necessary to have some information on the region of the UK and larger range, to be able to calculate population (collective) doses. The UK, EU and world populations are used for collective dose assessment in PC-CREAM 08, Reference [10]. EU12 and EU25 are defined including twelve countries and twenty-five countries of EU respectively.

T-2.4-9 Population Data Used in Collective Dose Assessment

Country/Region	Population
UK	5.96×10^7
EU12	3.60×10^8
EU25	4.56×10^8
World	1.00×10^{10}

2.4.6 Sensitive Areas and Species

For the GDA phase, designated sites, sensitive habitats and protected species are only defined in a general sense in order to characterise the potential ecological receptors that may be present at a generic coastal or estuarine site.

European designated sites include Ramsar Sites, Special Protection Areas and Special

Areas for Conservation. Nationally Designated Sites mainly include Sites of Special Scientific Interest and National Nature Reserves. Information on designated sites will be detailed at the appropriate time, i.e. at the site-specific permitting stage.

The considered reference organisms used in the NHB assessment are presented in T-2.4-10, Reference [12]. Reference organisms are taken from the ERICA tool. The latest version of the Ar-Kr-Xe tool used to determine the impact of noble gas release in the terrestrial environment contains the same list of reference organisms as the ERICA tool. Although the full list of organisms is different between ERICA and Ar-Kr-Xe tool, the organisms selected in Table T-2.4-10 are common to both tools.

T-2.4-10 Reference Organisms Used in the Dose Assessment for NHB

Marine Reference Organisms	Terrestrial Reference Organisms
Benthic fish	Amphibian
Bird	Annelid
Crustacean	Arthropod – detritivorous
Macroalgae	Bird
Mammal	Flying insect
Mollusc - bivalve	Grasses and herbs
Pelagic fish	Lichen and bryophytes
Phytoplankton	Mammal – small burrowing
Polychaete worm	Mammal – large
Reptile	Mollusc – gastropod
Sea anemones/true corals	Reptile
Vascular plant	Shrub
Zooplankton	Tree

2.5 Conclusions

The data listed in this chapter meets one of the basic assessment requirements of the P&ID (item 1, Table 1), Reference [1]. This document includes the parameters which can reflect the generic site characteristics adjacent to the objective site are used for radiological environmental impact assessment from the UK HPR1000.

At the site environmental permit application stage, the specific characteristics of the site will be improved to describe the actual location for the UK HPR1000.

2.6 References

- [1] EA, Process and Information Document for Generic Assessment of Candidate Nuclear Power Plant Designs, Version 3. October 2016.
- [2] General Nuclear System Ltd., Pre-Construction Safety Report Chapter 1

UK HPR1000 GDA	Pre-Construction Environmental Report Chapter 2 Generic Site Description	UK Protective Marking: Not Protectively Marked	
		Rev: 000	Page: 16/17

Introduction, HPR/GDA/PCSR/0001, Revision 000, September 2018.

- [3] The Stationery Office, The Environmental Permitting (England and Wales) Regulations 2016, SI 2016 No. 1154, December 2016.
- [4] Department of Energy and Climate Change, National Policy Statement for Nuclear Power Generation (EN-6), Vol 1&2, July 2011.
- [5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/48352/1138-map-nuclear-power-stations-uk.pdf
- [6] General Nuclear System Ltd., Pre-Construction Safety Report Chapter 2 General Plant Description, HPR/GDA/PCSR/0002, Revision 000, September 2018.
- [7] EA, Initial Radiological Assessment Methodology – Part 1 User Report, Science Report: SC030162/SR1, May 2006.
- [8] EA, Initial Radiological Assessment Methodology – Part 2 Methods and Input Data, Science Report: SC030162/SR2, May 2006.
- [9] General Nuclear System Ltd., UK HPR1000 Generic site report, HPR/GDA/REPO/0015, Rev 000, November 2017.
- [10] Health Protection Agency, The Methodology for Assessing the Radiological Consequences of Routine Releases of Radionuclides to the Environment Used in PC-CREAM 08. HPA-RPD-58, J G Smith and J R Simmonds (Editors), November 2009.
- [11] National Radiological Protection Board, A methodology for assessing doses from short-term planned discharges to the atmosphere, NRPB-W54, March 2004.
- [12] Europe Commission, Erica Assessment Tool, version 1.2, 2016.
- [13] Vives i Batlle, J., Jones, S.R. and Copplestone, D., A methodology for Ar-41, Kr-85, 88 and Xe-131m, 133 wildlife dose assessment. Journal of Environmental Radioactivity 144, 152-161, 2015.
- [14] National Radiological Protection Board, “A model for short and medium range dispersion of radionuclides released to the atmosphere”, NRPB-R91, September 1979.
- [15] General Nuclear System Ltd., Pre-Construction Safety Report Chapter 3 Generic Site Characteristics, HPR/GDA/PCSR/0003, Revision 000, September 2018.
- [16] National Radiological Protection Board, Generalised habit data for radiological assessments, NRPB-W41, May 2003.

UK HPR1000 GDA	Pre-Construction Environmental Report Chapter 2 Generic Site Description	UK Protective Marking: Not Protectively Marked	
		Rev: 000	Page: 17/17

- [17] National Dose Assessment Working Group, Guidance on short term release assessments, Guidance Note 6, Version 1.0 Final, 26.7.11.