

**Defence Equipment and Support**  
**Submarine Dismantling Project**  
**Strategic Environmental Assessment (SEA)**  
**Stage 'A' Scoping Report**  
**Non-Technical Summary**

June 2010





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### Document Revisions

No.	Details	Date
1	Initial Draft	24.4.09
2	Revised Draft	20.5.09
3	Final Draft	16.6.09
4	Revised Final Draft	26.8.09
5	Final version for release	17.9.09
6	Update to NTS	26.10.09
7	Further update to NTS	23.11.09
8	Interim refresh to update dates and reflect comments received from the SEA Sub-Group to the SDP Advisory Group	13.04.10
9	Final refresh and update	15.6.10
10	Version 1	17.6.10

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**Report for**

In-Service Submarines  
Defence Equipment and Support  
Ministry of Defence

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Doc Reg No. 25271

# Defence Equipment and Support

## Submarine Dismantling Project

### Strategic Environmental Assessment Scoping Report: Non-Technical Summary

June 2010

Prepared by Entec UK Limited and Defence Estates for Defence Equipment and Support, Ministry of Defence.



Certificate No. FS 13881



Certificate No. EMS 69090

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## Introduction

This is the Non-Technical Summary ('NTS') of the Scoping Report produced as part of the Strategic Environmental Assessment (SEA) of the Submarine Dismantling Project (SDP<sup>1</sup>). The Scoping Report is the first stage of the SEA process, and sets out the way in which the Ministry of Defence (MOD) proposes to undertake the SEA assessment.

### 1. What is Strategic Environmental Assessment?

SEA is a way by which the significant environmental effects of the SDP proposals can be identified and assessed before any major decisions are made on the outcome. This will allow potentially damaging effects to be avoided, minimised or mitigated, whilst positive ones can be enhanced.

SEA is required by legislation for certain strategic plans and programmes prepared by public bodies. The SEA Directive was implemented across Europe in 2004<sup>2</sup>; to date the Regulations have mainly been used in the development of Regional Spatial Strategies, Local Development Frameworks and other land-use plans by Local and Regional Authorities. However, SEAs for the plans and programmes of central government departments and agencies are now being published (see <http://www.direct.gov.uk/en/AdvancedSearch/Searchresults/index.htm?fullText=Strategic+Environmental+assessment+consultations> for examples).

The purposes of SEA are:

- to identify and quantify the potentially significant environmental effects of a plan or programme (in Scotland, this also includes strategies);
- to give the public the ability to see and comment upon the effects that the plan or programme may have on them and their communities, and encourage them to comment and suggest improvements;
- to ensure that environmental issues are properly considered throughout the planning stage, with appropriate measures being taken wherever possible to avoid, reduce or manage damaging environmental impacts and to enhance beneficial impacts.

All of the above must be completed before the plan or programme is adopted and planning permissions for the resulting developments are sought.

The main stages of the SEA process are:-

**Stage A** The scope of the SEA assessment (essentially, what issues will be covered) is determined by a Scoping Report, and the proposed approach is then agreed with Statutory Consultees. This Non-Technical Summary describes what is in that report, in non-technical language.

**Stage B** The likely environmental effects of the SDP options are assessed. This includes short-

<sup>1</sup> The SDP was previously known as the Interim Storage of Laid-Up Submarines (ISOLUS) project.

<sup>2</sup> European Union Directive 2001/42/EC (known as the SEA Directive) was transposed into UK legislation on the 20<sup>th</sup> July 2004 as Statutory Instrument No. 1633 – *The Environmental Assessment of Plans and Programmes Regulations 2004*. This applies to plans and programmes which have the potential to affect England and/or the UK as a whole. Devolved administrations have their own legislation in force.



and long-term, direct and indirect effects, as well as cumulative effects (where multiple small effects add together to have a large combined impact) and synergistic effects (where effects add together to create an impact greater than the sum of their parts).

- Stage C** An Environmental Report is written detailing the results of the assessments.
- Stage D** Public Consultation takes place on the SDP proposals and on the environmental report, after which the responses are considered and integrated into the final decisions on how to proceed with the proposals.
- Stage E** The environmental effects of the selected options for dismantling and ILW storage are monitored through subsequent statutory assessments at project level. A post-adoption report will be published to show how MOD has taken the public's feedback into account.

This is explained further in **Figure 2**.

Although the strict applicability of the SEA Regulations to the SDP remains unclear, the MOD will undertake an environmental assessment on the SDP proposals incorporating the requirements of the SEA Directive, as this is considered to be good practice. Undertaking an SEA will help ensure that the potential environmental implications of the options are assessed early on, so they can help inform, shape and improve the project as it develops. The approach will follow both MOD<sup>3</sup> and wider government<sup>4</sup> guidance.

The Scoping Report provides an opportunity for the UK's Statutory Consultation Bodies (listed in **Box 1**) to comment on the scope and the level of detail which should be included in the environmental assessment. The Scoping Report will also be sent to relevant Government departments and agencies for comment.

#### **Box 1: UK Statutory Consultation Bodies**

- The Environment Agency (England and Wales); Scottish Environment Protection Agency (SEPA); Northern Ireland Environment Agency.
- English Heritage; Historic Scotland; Cadw (Welsh Historic Monuments)
- Natural England; Scottish Natural Heritage; Countryside Council for Wales
- The Scottish Parliament and Welsh Assembly Government.

The SEA assessment will evaluate the environmental effects of the SDP's strategic options. The main output of the SEA assessment process will be an Environmental Report, which will be issued for public consultation alongside the draft SDP proposals.

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<sup>3</sup> The Environmental and Sustainability Appraisal Tool Handbook (Chapter Two: SEA) MOD, 2006.

<http://www.mod.uk/DefenceInternet/AboutDefence/CorporatePublications/DefenceEstateandEnvironmentPublications/DefenceEstates/SustainabilityAndEnvironmentalAppraisalToolHandbook.htm>

<sup>4</sup> A Practical Guide to the Strategic Environmental Assessment Directive. ODPM (now the Department for Communities and Local Government), 2006. <http://www.communities.gov.uk/publications/planningandbuilding/practicalguidesea>.



## 2. Background to the UK's Redundant Submarines

When a nuclear-powered submarine leaves service with the Royal Navy, the nuclear fuel is removed and sent for long-term storage at the Nuclear Decommissioning Authority (NDA) site at Sellafield, Cumbria. Serviceable equipment is removed for re-use. Currently, Babcock Marine at Devonport has the only nuclear Licensed site in the UK with the capability to defuel nuclear submarines. This work cannot be undertaken on an unlicensed site.



Laid-up submarines at Devonport

The hull is then laid up for long-term afloat storage in Devonport. Previously, submarines were also defueled at Rosyth in Scotland, and seven submarines remain there in long-term afloat storage. The majority of the radioactivity remaining in the defueled submarines is contained within the Reactor Pressure Vessel (RPV), in the form of radioactive steel. The RPV is contained within the Reactor Compartment (RC) and since it is held behind the same internal safety barriers as when the submarine was operational, it is safe to be stored afloat.

To date, 16 nuclear-powered submarines have left naval service and are stored safely afloat. Seven are at Rosyth; the remaining nine submarines are stored at Devonport, five of which await defueling. Whilst afloat storage has proved to be a very safe arrangement for over 30 years, it does not fulfil MOD or wider Government long-term nuclear decommissioning policies, which require that nuclear decommissioning and disposal operations should be carried out *as soon as reasonably practicable*. Additionally, afloat storage capacity at Devonport is expected to run out around 2020, and the cost of maintaining the redundant submarines is increasing significantly as they age and the number of submarines in afloat storage increases. As such, the current situation is not sustainable.

## 3. What is the Submarine Dismantling Project about?

Project ISOLUS (Interim Storage of Laid-Up Submarines) was set up in 2000 to develop and implement a safe, environmentally responsible, secure and cost-effective way of dismantling and disposing of the UK's 27 redundant and defueled nuclear submarines, of past and current classes<sup>5</sup>, as a more sustainable alternative to continued afloat storage. In 2009, the project was renamed the Submarine Dismantling Project (SDP) to better reflect the nature of its objectives.

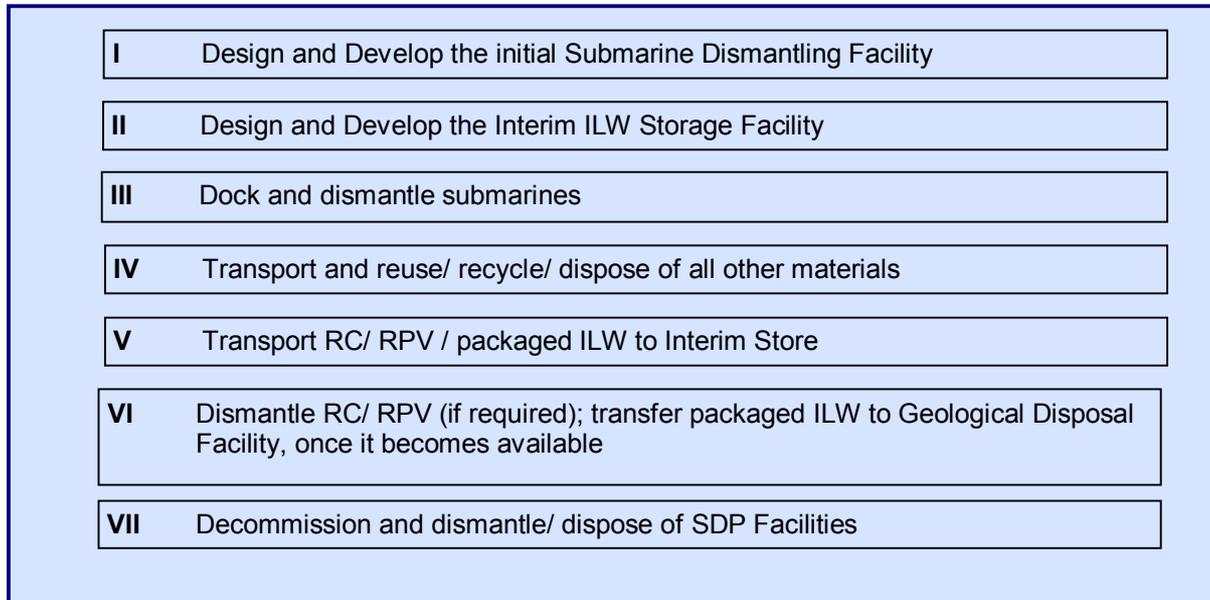
The SDP extends over an estimated 60-year period and involves dismantling the defueled submarines, reusing or recycling as much of the resulting non-radioactive material as practicable, and storing the residual Intermediate-Level Radioactive Waste (ILW) until the proposed Geological Disposal Facility (GDF) becomes available at some point beyond 2040 (see <http://www.nda.gov.uk/aboutus/geological-disposal> and <http://mrws.decc.gov.uk/> for more details).

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<sup>5</sup> (6x 'Superb' Class; 7x 'Trafalgar' Class; 2x 'Valiant' Class; 3x 'Churchill' Class; HMS Dreadnought; 4x 'Resolution' Class; 4x 'Vanguard' Class). The scope of the SDP *does not* include disposal of ASTUTE class or successor to the Vanguard Class submarines, although facilities will retain the flexibility to accommodate future classes of submarines where possible.



Low-Level Radioactive Waste (LLW) already has an established disposal route to the UK National LLW Repository in Cumbria, and there will be no high-level waste to manage, since the fuel will already have been removed. Both dismantling and ILW storage are likely to require specialist facilities to be developed (and eventually decommissioned). However, it will be possible to dismantle the non-radiological front and rear parts of the submarine at a commercial ship-breaking facility elsewhere in the UK. **Figure 1** explains the stages of the SDP.



**Figure 1 Key Stages and Activities of the SDP Programme**

The key underpinning principles of the SDP are that:

- afloat storage is not a reasonable long term option, due to both MOD and wider Government decommissioning policies, together with storage capacity constraints;
- the UK's redundant submarines cannot be dismantled or disposed of abroad, for defence and security reasons;
- all submarines will already have been defueled before they undergo dismantling;
- the GDF is not expected to be available until at least 2040, necessitating the development of interim ILW storage;
- a dockyard with sufficient depth of water will be required to dock and dismantle the submarines;
- all dismantling activity on the reactor compartment must take place at a site that holds an appropriate nuclear licence and/ or authorisation (whether this is at a new or an existing facility);
- most of the radiological work involved in dismantling (e.g. work involving radioactive materials) is already established practice in submarine refits and civil reactor decommissioning, so there will be very few new technical procedures involved;
- the non-radiological front and rear parts of the submarine (which form the bulk of each vessel), do not have to be dismantled at a nuclear Licensed or Authorised site, so could potentially be handled at a commercial ship breaking facility;



- where feasible, non-radiological materials from dismantling will be re-used or recycled (rather than be disposed of);
- if the Reactor Compartment is to be stored intact, the interim ILW store will be restricted to a coastal / near-coastal site, due to transport restrictions. Storage of RPV or fully-packaged waste could, however, be more flexibly located;
- the principles of legal compliance, adopting industry good practice, openness and transparency will be fully applied to the project; further public consultation will be undertaken before any major decisions are made.

#### 4. Public Consultation on the SDP

Two public consultations on the project have been held to date (in 2002 and 2003). An independent advisory group also provides ongoing advice and guidance. See [www.submarinedismantling.co.uk](http://www.submarinedismantling.co.uk) for more information.

A key recommendation of these consultation processes was that MOD's management of its radioactive waste should fit with the recommendations made by the independent Committee on Radioactive Waste Management (CoRWM), set up by the Government in November 2003 to recommend a strategy for the long-term management of the UK's legacy higher-activity solid radioactive waste. CoRWM recommended that a programme of robust, safe and secure interim storage of ILW would be required until a national disposal facility is established, which fits well with the strategic aims of the SDP.

The third public consultation, of which the SEA Environmental Report will be a part, will be conducted on the proposed implementation options for the SDP.

#### 5. What Options are being Considered?

The SDP is a national project which consists of seven stages (**Figure 1**). Stages I and II (development of the dismantling and interim ILW storage facilities) involve finding suitable locations for both activities. Stage III involves determining the best initial dismantling option (e.g. the extent to which the Reactor Compartment is taken apart 'up front'). Stages IV-VII are 'process' stages, whereby proven industry practices will be used to achieve the desired outcome. The third public consultation will specifically be seeking people's views on various options for achieving Stages I-III:

**A. Where should submarine dismantling activities be undertaken (Stage I)? and**

**B. Where should interim ILW storage facilities be developed (Stage II)?**

The initial dismantling and interim storage facilities could be developed on 'green-field,' undeveloped sites; on 'brown-field,' previously developed sites (both of which would need to be Licensed for nuclear work), or on existing sites which are already Licensed or Authorised to undertake nuclear work. Since 'green-field' and 'brown-field' site types could potentially be anywhere in the UK, it is considered reasonable to include these generic options in the public consultation.



There are only a relatively small number (around 40) of 'existing' nuclear Licensed or Authorised sites in the UK, so it is reasonable to select those that fulfil the project's requirements, and undertake the SEA environmental assessment upon them. These project requirements are based on practicalities such as space, ownership and operations, and on the underpinning principles listed in Section 3. The process of identifying credible sites is ongoing, and will be undertaken in collaboration with other government departments and Statutory Bodies, to ensure that it is robust. The results will be made public via the SDP web-site, and explained fully in the public consultation.

The non-radiological front and rear sections of the submarine (which form the bulk of each vessel) do not need to be dismantled at a nuclear Licensed or Authorised site (although a suitably-licensed ship-breaking facility will be required). This gives the MOD the option of i) undertaking all the dismantling work at the selected nuclear Licensed/ Authorised site; or ii) undertaking the nuclear work at this facility, and sending the remaining boat sections to a commercial ship-breaking facility elsewhere in the UK, which may present opportunities to maximise value for money. Defence and security reasons will prevent the submarines being dismantled abroad.

### C. How should the submarines be dismantled (Stage III)?

The principal options at the present time are: Firstly, cutting out and storing the entire Reactor Compartment (the central 'slice' of the submarine), which is current practice in the USA, Russia and France; secondly, dismantling the RC but keeping the Reactor Pressure Vessel intact, or thirdly, fully dismantling the RC *in situ* and packaging the ILW into transportable containers, compatible with storage in the GDF. In all of these options, the reactor will have to be fully dismantled and packaged before the waste can be placed in the GDF, so the most significant difference between these options is when dismantling the RC and packaging the ILW will be carried out. Storing the RC or the RPV would mean deferring the full processing and packaging of ILW until the GDF becomes available.

## 6. What is the Proposed Scope of the SEA?

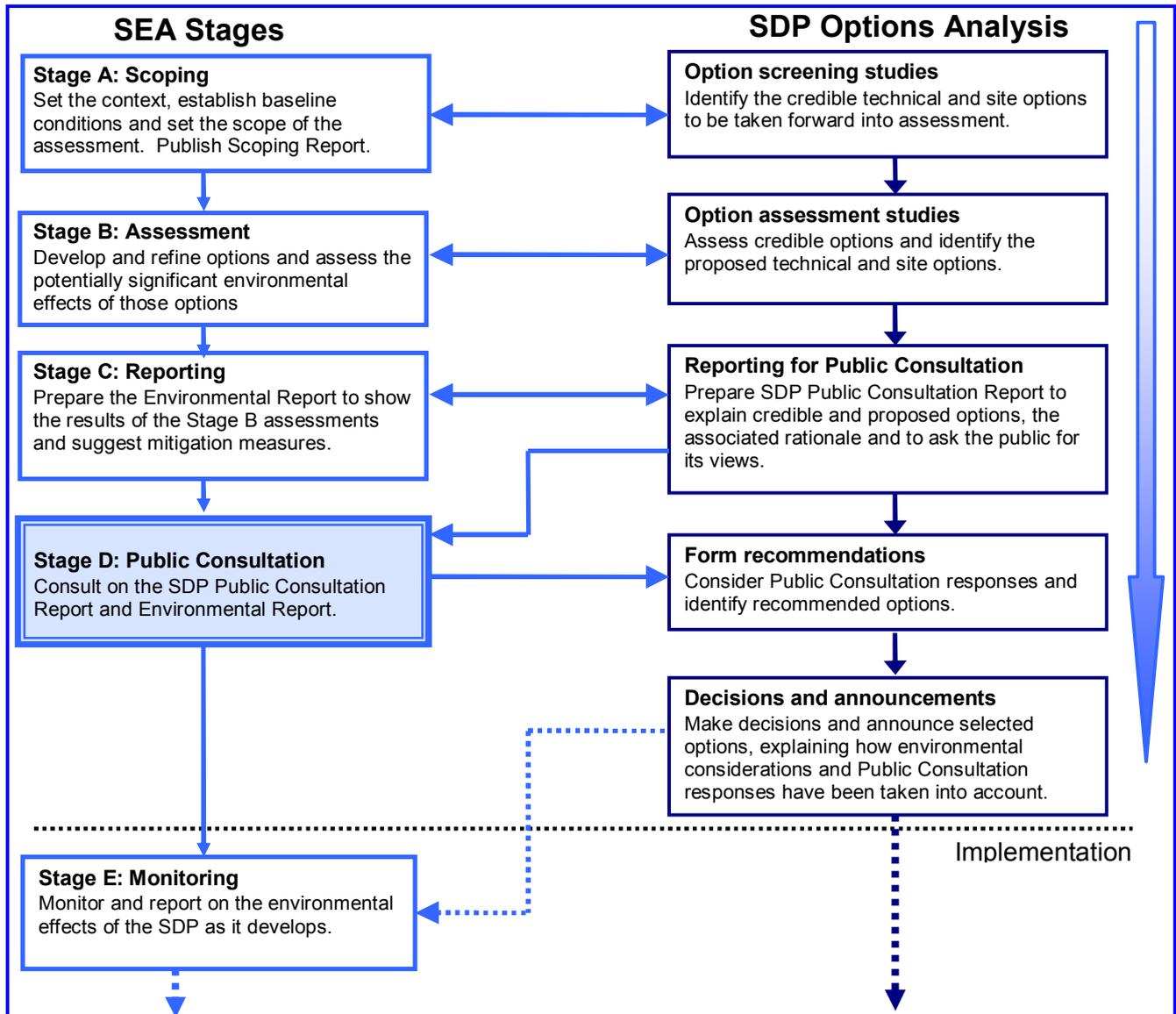
The MOD is proposing to do the following:-

- Firstly, to assess the generic environmental impacts that could arise at each stage of the SDP (Stages I to VII in **Figure 1**). This will include assessing the environmental impacts associated with the three different dismantling options, and with developing dismantling and / or storage facilities on 'green-field,' 'brown-field' or 'existing' UK nuclear-Licensed or Authorised sites.
- Secondly, to assess what the environmental impacts might be if SDP work takes place at any of the credible 'existing' Licensed or Authorised sites identified through the ongoing process mentioned above. Assessing individual candidate sites will clearly contain more detail than the generic assessments, since site-specific information will be available. However, SEA is not meant to be a detailed assessment of individual options, so the findings will remain relatively high-level. In addition, the inclusion of individual 'existing' sites does not mean that these are the only ones under consideration within the SEA; each feasible option (including the generic 'green-field' and



'brown-field' options) will be considered on an equal basis. This is explained further in **Figure 2** and **Table 1**.

**Figure 2 Overview of the SEA Process within the SDP.**



- Whichever site(s) are finally chosen, further site-specific environmental assessments will be needed before any development can take place. MOD expects that these will include (but not be



limited to) Town & Country Planning Environmental Impact Assessment, Environmental Impact Assessment for Nuclear Decommissioning and Environmental Permitting<sup>6</sup>.

## 7. What is in the Scoping Report?

The Scoping Report forms the first formal stage (Stage A) of the SEA process and sets out the following information:

- An introduction to the SDP;
- the generic options for dismantling the submarines and managing the resulting waste streams until the Geological Disposal Facility becomes available;
- a description of the current and future state of the UK environment (the 'baseline conditions'), making particular reference to any existing environmental problems that the project could have an impact upon;
- a list of relevant plans, programmes and strategies at International and National level, to indicate how the SDP could be affected by outside factors (such as waste or climate change strategies);
- to identify relevant environmental protection objectives which will need to be taken into account during the SDP's preparation;
- the proposed SEA objectives and assessment questions, by which the environmental performance of the SDP and alternatives can be assessed (these are included in this NTS);
- a top-line assessment of the potentially significant effects of the SDP; and
- the proposed content of the Environmental Report.

The MOD will be asking UK Statutory Consultees (listed in **Box 1**) whether they agree with the information in the report or have anything to add.

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<sup>6</sup> The Town & Country Planning (Environmental Impact Assessment) (Amendment) (England) Regulations 2008, plus devolved equivalents; the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999; and the Environmental Permitting Regulations 2010



**Table 1 Types of Assessment Proposed for Each Stage of the SDP**

Key Stages of the Submarine Dismantling Project	Proposed Generi- Level SEA Assessment for the SDP's strategic options	Proposed Site-Level SEA Assessment for the SDP's strategic options
<b>Stage I:</b> Develop the initial dismantling facility on an undeveloped 'green-field' site, a developed 'brown-field' site or an 'existing' Licensed or Authorised nuclear site	Assessment of each generic site category	Following assessment of each generic site category, assessment(s) of each credible 'existing' Licensed/ Authorised initial dismantling site
<b>Stage II:</b> Develop of the interim storage facility for the reactor compartment, reactor pressure vessel or packaged ILW on an undeveloped 'green-field' site, a developed 'brown-field' site or an existing Licensed or Authorised nuclear site	Assessment of each generic site category	Following assessment of each generic site category, assessment(s) of each credible 'existing' Licensed/ Authorised interim storage site
<b>Stage III:</b> Dock and dismantle submarines	Generic assessment of each technical option	N/A
<b>Stage IV:</b> Reuse/ recycle/ dispose all materials except ILW	Generic assessment of the processes	N/A
<b>Stage V:</b> Transport ILW to the interim storage facility	Generic assessment of the process	Consideration of site-specific issues where relevant
<b>Stage VI:</b> Dismantle RC/ RPV (if required); transfer packaged ILW to Geological Disposal Facility (ca. 2040) on)	Generic assessment of the process	N/A
<b>Stage VII:</b> Decommission and dismantle/ dispose of SDP facilities once all submarines have been disposed of	Generic assessment of the process	N/A

## 8. What Environmental Issues are Relevant for the SDP?

The SEA Directive requires that the existing environmental issues which are relevant to the plan or programme are identified at scoping stage. These have been identified by reviewing the plans and programmes and assessing the baseline information, and are summarised in **Table 2** below. They are not exhaustive and are not presented in any order of priority.



**Table 2 Key Environmental Issues for the SDP**

**Biodiversity and Nature Conservation:** Consideration will be given to the potential effects of the SDP proposals on the natural environment, including fisheries and areas protected for their wildlife and conservation importance.

**Population:** Consideration will be given to the potential effects of SDP proposals on local communities, including socio-economic impacts and the extent to which proposals present opportunities for community benefit, e.g. through skills development. *(Note that assessment of economic effects is not an environmental issue and is not required by SEA, but has been included to reflect the importance of these issues to the wider public).*

**Human Health and Wellbeing:** The potential effects of SDP proposals on peoples health and on health service provision will be assessed. This will include issues related to radiological work.

**Human Health (Noise):** The potential noise-related impacts of the SDP options will be assessed, particularly on sensitive receptors such as people and wildlife.

**Soil and Geology:** Consideration will be given to potential effects of the SDP proposals on soil extent, variety and quality (including land contamination and the potential for disturbing historic contamination) and on protected/ important geological features. The effects of land instability and coastal erosion will also be assessed.

**Water:** Consideration will be given to the potential effects of SDP proposals on surface waters, groundwater systems and the marine environment, including flood risk and the effects of Licensed and unplanned discharges to water.

**Air:** Consideration will be given to the potential effects of the SDP on air quality, including the effects of Licensed and unplanned discharges to the atmosphere.

**Climate Change and Energy Use:** Consideration will be given to the likely impacts of climate change, such as sea level rise and increased flood risk on the SDP. The SEA will also assess the potential effects of the SDP itself on energy use and greenhouse gas emissions.

**Material Assets (Transport):** The SDP will necessarily involve dismantled components and materials being transported off-site. Consideration will be given to the potential effects of transporting oversized, hazardous and/ or radioactive materials on existing transport systems and infrastructure, particularly through urban and other sensitive areas.

**Material Assets (Waste Management):** The SDP is essentially a waste management programme. Consideration will be given to potential waste volumes and the effects this may have on current waste management infrastructure and the market for recycled materials. The extent to which the SDP proposals represent good practice (e.g. reduce, re-use, recycle, dispose) and overcome existing challenges will also be assessed.

**Material Assets (Materials and Land Use):** The SDP will involve the development of new or upgraded facilities. Consideration will be given to the potential effects of the SDP proposals on land use, on the use of finite resources such as minerals, and on the quality and environmental performance of buildings and facilities.

**Cultural Heritage:** Consideration will be given to the potential effects of the SDP proposals on the historic environment, including cultural heritage resources, historic buildings and archaeological features.

**Landscape and Townscape:** Consideration will be given to the potential effects of the SDP proposals on the quality and attractiveness of landscapes and townscapes, as well as on public access to open spaces.



## 9. What are the Proposed SEA Objectives and Guide Questions?

The review of international and national plans, programmes and environmental protection objectives, analysis of the baseline evidence and the assessment of the relevant environmental issues for the SDP (above) have been used to establish a number of SEA Objectives - essentially guiding principles for sustainable development - which the project should seek to accommodate. For each objective, guideline questions will be used to assess the environmental performance of the different project options. Suggested objectives and guide questions are shown in **Table 3** below. This is one of the areas on which we are seeking feed-back from consultees.

**Table 3 Proposed SEA Objectives and Assessment Questions**

<b>Assessment Category &amp; Overall Objective</b>	<b>Proposed Assessment Questions <i>Will the SDP Proposals...</i></b>
<b>A. Biodiversity and Nature Conservation</b> Protect and enhance habitats, species and ecosystems.	Affect animals or plants, including protected species? Affect important conservation sites? Affect the structure and function of natural systems (ecosystems)? Affect public access to areas of wildlife interest? Have an impact on fishery resources?
<b>B. Population</b> Promote a strong, diverse and stable economy with opportunities for all; minimise disturbance to local communities and maximise positive social impacts.	Affect social infrastructure and amenities available to local communities? Change local population demographics and/ or levels of deprivation? Affect opportunities for investment, education and skills development? Affect the number or types of jobs available in local economies? Affect how diverse and robust local economies are? Affect property values in the surrounding area? Affect the sense of positive self-image and the attractiveness of surrounding areas as places to live, work and invest in?
<b>C. Health &amp; Wellbeing</b> Protect and enhance health, safety and wellbeing of workers and communities; minimise any health risks associated with processing submarines.	Affect the health or safety of SDP workers, or other people working at the proposed sites? Affect the health, safety and well-being of local communities? Affect local healthcare infrastructure and provision?
<b>D. Health (Noise &amp; Vibration)</b> Minimise disturbance and stress to people, wildlife and historic buildings caused by noise and vibration.	Result in significant changes in noise and vibration sources or levels? Affect noise and vibration levels to sensitive receptors (e.g. people, wildlife and historic buildings)?



<b>Assessment Category &amp; Overall Objective</b>	<b>Proposed Assessment Questions</b> <i>Will the SDP Proposals...</i>
<p><b>E. Geology and Soils</b> Minimise threats to the extent and quality of soils and geological resources.</p>	<p>Have an effect on soil quality, extent and/ or density? Have an effect on contamination levels? Affect geological conservation sites and important geological features? Affect land stability? Affect coastal processes and/ or erosion?</p>
<p><b>F. Water</b> Maximise water efficiency, protect and enhance water quality and minimise flood risk.</p>	<p>Affect demand for water resources? Affect the amount of waste water and surface run-off produced? Cause any changes in radioactive or other hazardous discharges to water? Affect the quality of groundwater, surface waters or sea water? Affect the distribution and quality of freshwater or marine sediments? Affect existing flood risks? Be significantly affected by flooding from any source?</p>
<p><b>H. Climate Change and Energy Use</b> Reduce energy consumption, minimise detrimental effects on the climate from greenhouse gases and maximise resilience to climate change.</p>	<p>Create a change in the amount of carbon dioxide and other greenhouse gases emitted? Be significantly affected by climate change (for example rising sea levels and more extreme weather events)? Affect how climate change might impact on the wider environment? Promote or impede the use of energy efficiency measures, low carbon and/ or renewable energy sources? Have wider implications for the mitigation of climate risks?</p>
<p><b>I. Material Assets (Transport)</b> Minimise the detrimental impacts of travel and transport on communities and the environment, whilst maximising positive effects.</p>	<p>Affect the number and frequency of heavy, oversized, radioactive and/ or hazardous loads being transported off-site, particularly through population centres and other sensitive receptors? Increase or decrease traffic congestion around SDP sites? Increase or decrease accident risks around SDP sites?</p>
<p><b>J. Material Assets (Waste Management)</b> Minimise waste arisings, promote reuse, recovery and recycling and minimise the impact of wastes on the environment and communities.</p>	<p>Increase the amount of radioactive waste to be disposed of? Affect the amount of hazardous waste to be disposed of? Affect the amount of non-hazardous wastes produced? Affect the capacity of existing waste management systems, both nationally and locally? Maximise re-use and recycling of recovered components and materials? Help achieve government and national targets for minimising, recovering and recycling waste? Affect the environmental risks associated with managing radioactive and hazardous wastes?</p>



Assessment Category & Overall Objective	Proposed Assessment Questions <i>Will the SDP Proposals...</i>
<b>K. Land Use and Materials</b> Contribute to the sustainable use of land and natural and material assets	Change patterns of land use on or around SDP sites? Affect any existing or proposed redevelopment/ regeneration programmes? Lead to the loss of undeveloped land or green spaces? Increase the burden on limited natural resources such as aggregates or wood? Promote the use of sustainable design and construction practices and help the government achieve its targets for the built environment?
<b>L. Cultural Heritage</b> Protect and where appropriate enhance the historic environment including cultural heritage resources, historic buildings and archaeological features.	Affect designated or locally-important archaeological features? Affect the fabric and setting of historic buildings, places or spaces that contribute to local distinctiveness, character and appearances?
<b>M. Landscape and Townscape</b> Protect and enhance landscape and townscape quality and visual amenity	Have significant visual impacts (including those at night)? Affect protected/ designated landscapes or townscapes, such as National Parks or Conservation Areas? Affect the intrinsic character of local landscapes or townscapes? Affect public access to open spaces or the countryside?

## 10. How will the Assessments be Undertaken?

For each of the options within the SDP (shown in **Figure 1** and **Table 1**), assessment will be undertaken using an SEA matrix which has been developed by the MOD to meet the SEA's statutory requirements. The matrix is shown in **Table 4**. This will enable both the nature and magnitude of the environmental effects to be recorded. Specific elements to be included within the assessment will include:

- The potential environmental effects of each SDP option.
- The mitigation measures that might be used to reduce potentially significant negative effects and enhance potentially positive effects.
- The assumptions and uncertainties that underpin the assessment.
- The additional information that would be required to address any uncertainties and to undertake more detailed site-specific assessment.
- The timescales over which the potential effects are likely to occur. For the Submarine Disposal Programme, the proposed definitions of timescale are: Short term = up to 5 years after each activity begins; medium term = 5 years to the end of the activity; long term = after the activity has ceased.

Symbols and colour coding will also be used to indicate significant (positive or negative) impacts.



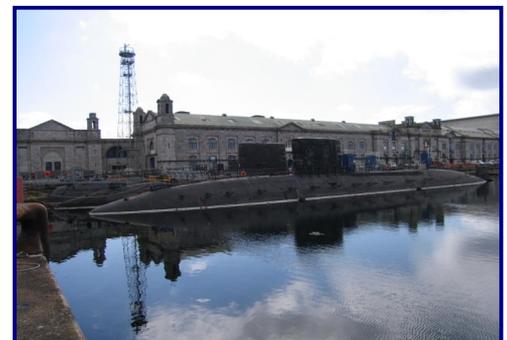
**Table 4**

**EXAMPLE Assessment Matrix for each SDP Option**

Assessment Category and Objective	Likely Effects (including direct, indirect, cumulative and synergistic effects, and possible mitigation measures)	Timescale		
		Short-Term	Medium-Term	Long-Term
<b>A. Biodiversity and Nature Conservation:</b> Protect and enhance habitats, species and ecosystem functionality.	A description of the biodiversity and nature conservation effects of each option will be provided here, with reasoning and justification included...	-	0	0
<b>B. Population:</b> Promote a strong, diverse and stable economy with opportunities for all, minimise disturbance to local communities and maximise positive social impacts.	A description of the population effects of each option will be provided here...	++	+	0
<b>C. Health, Safety and Wellbeing</b> Protect and enhance health, safety and wellbeing of communities and minimise potential risk associated with processing radioactive and non-radioactive materials.	A description of the health and wellbeing effects of each option will be provided here...	0	0	+
....etc				
<b>++</b> Strongly positive effect <b>+</b> Positive effect <b>0</b> No significant effects <b>-</b> Negative effect <b>- -</b> Strongly negative effect				

**11. What are the Next Steps of the SEA Process?**

This Non-Technical Summary and the accompanying Scoping Report has been provided to the UK’s Statutory Consultation Bodies for comment. Input has also been invited from relevant Government Departments and Agencies, and the UK’s Devolved Administrations. The proposed approach is as follows:-



- 1) Comments from Scoping Consultees will be invited during a standard five week consultation period, starting on the date the Scoping Report is received. Comments and responses received during that period will be considered and used to refine the scope of the assessment.
- 2) The environmental categories (once agreed upon) will be used to help identify the credible ‘existing’ Licensed or Authorised sites, as part of the wider site selection process. Once this indicative site list has been generated, the SEA Scoping Report will be updated to include these sites and relevant environmental information about them. The updated report will then be re-issued for a further statutory consultation. In both cases, the comments received (and MOD’s response to them) will be made public.



- 3) The environmental assessments will then take place on the strategic options for the SDP, including an assessment of 'green-field,' 'brown-field' and the credible 'existing' Licensed or Authorised sites.

The Environmental Report will form part of the consultation materials for the third national public consultation on the SDP. The public consultation will seek the views of those interested in the SDP proposals. It will be a national consultation, although specific events will take place in the areas around credible sites. The views and representations received during the public consultation will be published once the consultation has ended, with MOD's initial response to them. Whilst it may not be possible for all comments and suggestions to be accepted, MOD will take all feedback fully into account before any final decisions are made, and will make those decisions and justifications public.



## Abbreviations and Glossary

Authorisation	Authorisations allow specific defence-related nuclear activity to take place at a specific site. Such 'Authorised' sites are not subject to the Nuclear Installations Act (unlike civil nuclear sites) and so activities are not formally 'Licensed.' Instead, Authorisations are granted by the Defence Nuclear Safety Regulator.
'Brown-field' land	This term refers to land which is, or has previously, been previously been built upon or otherwise developed.
CoRWM	<u>Committee on Radioactive Waste Management</u> This independent committee provides scrutiny and advice to Government on the long term management of radioactive waste, including storage and disposal. See <a href="http://www.corwm.org.uk/default.aspx">http://www.corwm.org.uk/default.aspx</a>
'Cut Out'	This term refers to the technical option of cutting out the complete Reactor Compartment, thus separating it from the rest of the submarine. The RC is then stored intact.
'Cut Up'	This term refers to the technical option of cutting up the Reactor Compartment and the items within it to reduce their size, so that the radioactive waste can be packaged in appropriate containers for storage, transport and ultimate disposal.
GDF	<u>Geological Disposal Facility</u> This is the government's proposed long-term, below-ground facility for disposing of the UK's higher-level nuclear waste. The GDF has yet to be built. See <a href="http://mrws.decc.gov.uk/en/mrws/cms/home/What_is_geolog/What_is_geolog.aspx">http://mrws.decc.gov.uk/en/mrws/cms/home/What_is_geolog/What_is_geolog.aspx</a> for more details.
'Green-field' land	This term refers to land that has not previously been developed, such as farmland. On such land, there would be no existing buildings, docks or other resources needed to undertake submarine dismantling or store ILW.
ISOLUS	<u>Interim Storage of Laid-Up Submarines</u> This is the former name of the Submarine Dismantling Project.
ILW	<u>Intermediate-Level Waste</u> This is radioactive waste with a radiological activity above 4 Giga Becquerels (GBq) per tonne of alpha or 12 GBq/tonne of beta-gamma decay, but which does not generate sufficient levels of heat to require it to be cooled during storage. The major components of ILW from submarines are metals and organic materials, with smaller quantities of cement, graphite and ceramics.
Licence	A nuclear Licence allows specific nuclear activities to take place at a specific site. Such 'Licensed' sites are subject to the Nuclear Installations Act (1965), with Authorisations being granted by the Nuclear Installations Inspectorate. Nuclear power stations and other civil activities are Licensed in this way.
LLW	<u>Low-Level Waste</u> This is defined as radioactive waste that has below 4 Gbq per tonne of alpha activity and below 12 GBq per tonne of beta-gamma activity. It covers a variety of materials which arise principally as lightly contaminated miscellaneous scrap and redundant equipment.



MRWS	<p><u>Managing Radioactive Waste Safely</u></p> <p>This is the UK Government's published approach to managing the nation's radioactive wastes, irrespective of where they come from and their level of activity. The SDP will adhere to this approach.</p>
RPV	<p><u>Reactor Pressure Vessel</u></p> <p>This is the heart of the nuclear reactor that, prior to defueling, contains the uranium fuel. It is located in the Reactor Compartment (RC).</p>
NDA	<p><u>Nuclear Decommissioning Authority</u></p> <p>This government agency is responsible for (among others) developing the UK's nuclear low-level waste strategy and plans, and managing the long-term arrangements for the UK's higher-level radioactive waste.</p>
RC	<p><u>Reactor Compartment.</u></p> <p>This is the central 'slice' of the submarine which contains the nuclear reactor (housed within the Reactor Pressure Vessel) and associated pipe-work.</p>
Repository	A permanent disposal facility for radioactive wastes.
SDP	Submarine Dismantling Project <a href="http://www.submarinedismantling.co.uk">www.submarinedismantling.co.uk</a>
SEA	Strategic Environmental Assessment

