Submarine Dismantling Project (SDP) Consultation

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Summary and Recommendation:

This report provides a summary of the consultation document for the MoD's Submarine Dismantling Project (SDP) published in October 2011 with responses to be submitted by 17th Feb. The SDP document gives an overview of the process so far that has led to the decision to dismantle the submarines, why they have chosen the proposed dismantling locations and the future options for storage of the nuclear waste.

Recommendation:
That the contents of the report are noted and that members consider the proposed response to the consultation document as attached at Appendix C.

1. Background / Introduction

The Submarine Dismantling Project (SDP) is a project to implement the dismantling of the current retired 17 nuclear submarines and proposals for future dismantling. The document describes the Ministry of Defense (MoD) proposals for taking the project forward, their rationale behind the proposal and their assessment of the environmental effects that will result.

Currently, when a nuclear submarine leaves service it is stored afloat and regularly maintained to preserve it in a safe condition. The consultation documents states that there are a total of 17 submarines currently being stored in this way in the UK. Seven out-of-service submarines are stored at Rosyth Dockyard and 10 are at Devonport Dockyard. All submarines leaving service in future will be stored at Devonport awaiting dismantling; no further submarines will be stored at Rosyth.

In Section 8 of the consultation document, where the rationale behind choosing Devonport and Rosyth Dockyards is discussed, it states that to use Rosyth Dockyard only is the least attractive option in terms of cost as it would require 20 submarines to be moved north. It is assumed that the discrepancy in the numbers is due to the current number of submarines currently docked

out of service and the actual number of submarines that will be out of service by the time this project becomes operational.

The document is intended to provide information on the process so that the Council and other stakeholders can provide meaningful feedback into the consultation process. The consultation process closes on the 17th February 2012. A number of workshops have been run alongside this document.

The MoD does not have existing solutions for the dismantling of the submarines and the storage of Intermediate Level Waste (ILW). The key decisions that need to be reached by the MoD are:

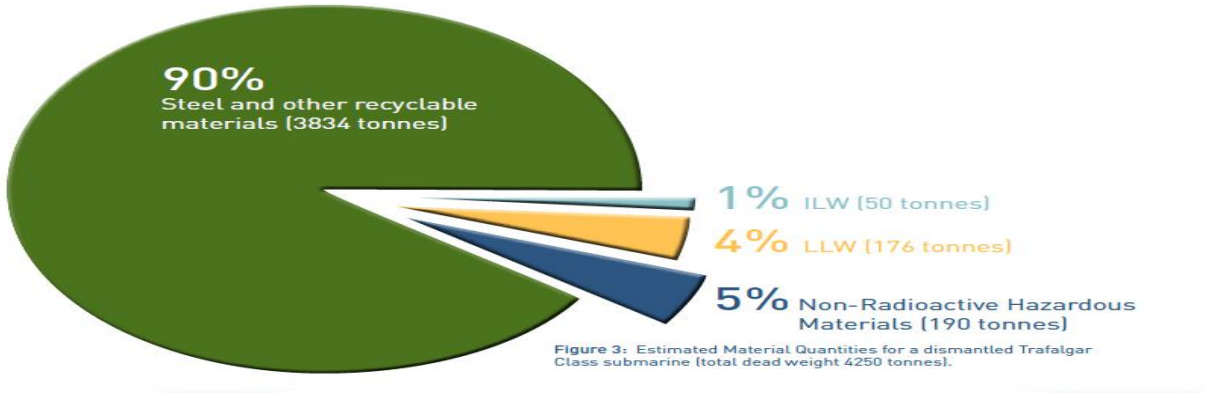
- How the radioactive materials are removed from the submarine
- Where the radioactive materials are removed from the submarines
- Which type of storage site is used for storing the ILW until it can be disposed of in the proposed Geological Disposal Facility (GDF).

2. Why are the submarines being dismantled?

After they have left service, nuclear powered submarines are currently stored afloat at Devonport and Rosyth Dockyards where they undergo regular maintenance to keep them in a safe condition.

Whilst this has proved to be an acceptable arrangement for over 30 years, the cost to the tax-payer of maintaining them safely is rising significantly as they age and as more submarines leave service. The MoD expect to reach capacity to store further submarines by 2020, by which time a dismantling solution will need to be in place or the MoD will have to invest in creating more berthing space.

Figure 1 Materials and Waste resulting from dismantling



Source: Submarine Dismantling Project (SDP) Consultation Document 28th October 2011 Pg.19

Figure 1 illustrates that the MoD estimate that a large proportion of the dismantled submarines can be recycled.

The radioactive waste includes Low Level Waste (LLW) and Intermediate Level Waste (ILW) which is in the form of steel that has become radioactive in the Reactor Pressure Vessel (RPV). The MoD are committed to dealing with the legacy of out-of-service submarines rather than leaving future generations to do so.

3. Assessment of dismantling options

There are 3 possible options for removing radioactive waste from the submarines. The options outlined focus on the removal of ILW (components that were close to the fuel).

1. Separate and store the whole reactor Compartment - "RC Separation"

- The whole RC would be separated from the front and rear sections of the submarine and stored whole, leaving the hull of the submarine in two sections. Due to its size it would be difficult and very expensive to move the RC, so it is assumed in this option that it would be stored where it is removed (at the initial dismantling site and therefore not Sellafield).

2. Remove and Store the Reactor Pressure Vessel - "RPV Removal"

- The RPV and other radioactive materials would be removed through a hole in the hull of the submarine. The RPV and any remaining ILW would then be packaged in a shielded container that is suitable for transport and storage and size reduced at a later date. (Possibly to be stored at Sellafield until the DGF is available)

3. Remove and size –reduce the RPV for storage as Packaged waste "Packaged Waste"

- The RPV and other radioactive waste would be removed in the same way as above but then immediately size-reduced and packaged into boxes for storage. No further cutting-up or packaging would be required in future before the boxes are disposed of. (Possibly to be stored at Sellafield until the DGF is available)

A fourth option is mentioned briefly within the document. It states that the MoD are exploring the possibility that the proposed GDF could accept larger packages which could mean the RPV could be disposed of without being cut up.

If this further possibility is established as a credible option, it will be important that the further process of assessment and decision making is clear to stakeholders and that appropriate opportunity for engagement and comment is provided.

The main difference between the 3 options therefore is the order and timing in which the size-reduction and storage activities are carried out, and the form in which the waste is removed from the submarine and stored while awaiting a disposal solution.

Figure 2 Summary of comparison of technical options

Option	Advantages	Disadvantages	Cost
RC Separation and storage	Allows for radioactive decay before RPV is removed and size-reduced Flexible to changes in entry conditions to the proposed GDF Experience of this approach in other countries	Additional operations and facilities to store and handle RCs Seaworthiness of submarine hull is compromised (for transport to ship recycling) RCs can only be transported by sea Very large store footprint (over 10 times larger than other options) causing largest overall environmental impact of storage facility	Generally most expensive due to RC handling and storage costs Potential cost savings if RPV size-reduction proves unnecessary or simpler due to decay Costly size-reduction facilities and operations deferred until later
RPV Removal and storage	Allows for radioactive decay before RPV is size-reduced Flexible to changes in entry conditions to the proposed GDF RPV transportable by land or sea RPV is self-shielding therefore less shielding required than for packaged waste	Transport, handling and storage less standardised than for packaged waste	Generally comparable to packaged waste Potential cost savings if RPV size reduction proves unnecessary or simpler due to decay Costly size reduction facilities and operations deferred until later
RPV Removal and size-reduction for storage as packaged waste	Stores ILW in disposable form with no further processing required Consistent with civil transport, handling and storage arrangements Packaged waste transportable by land or sea	Less flexible to changes in entry conditions to the proposed GDF Less radioactive decay prior to size reduction	Generally comparable to RPV Removal and storage Potential savings through use of NDA storage facilities Unnecessary initial expenditure if size-reduction not required

Source: Submarine Dismantling Project (SDP) Consultation Document 28th October 2011 Pg.41

The MoDs preferred strategy for removing the radioactive waste is RPV removal and storage.

This proposed option preserves the potential opportunity to dispose of whole RPVs without the need for size-reduction (cutting them up into smaller pieces to form packaged waste) in the future. This would make significant cost savings if size-reduction proves to be unnecessary for disposal, unlike the Packaged Waste option which commits to size-reduction sooner.

4. Assessment of proposed sites

For Security reasons initial dismantling must be carried out in the UK. It must also take place at a site that holds a nuclear license.

In order to assess the submarine dismantling sites the MoD used two types of screening criteria. The primary screening criteria are key fundamental requirements; unless a site meets these conditions, it will not be considered suitable for undertaking SDP activities and no further consideration is given. Using this criteria the sites were reduced from 8 to 4, Rosyth, Devonport, Barrow-in-Furness and HMNB Clyde

The secondary screening criteria consider the requirements at a more detailed level, and are applicable to those sites which meet the primary screening criteria. These are also pass / fail criteria; any site failing any of these will not be considered suitable for the respective SDP activity. (See Appendix A – Criteria used to assess SDP sites). From the secondary screening the 4 sites where narrowed to Rosyth and Devonport.

All sites in the UK that currently carry out nuclear activities were assessed against the criteria. A complete list of the sites assessed and their evaluation is available in Appendix B – Candidate Sites for Initial Dismantling.

Devonport Dockyard and Rosyth Dockyard, where out-of-service submarines are currently stored and where in-service submarines are, or have been, maintained and refitted, met the screening criteria

The submarines could be dismantled at either of these sites or at both (the 'dual site' option). Under the dual site option, each dockyard would undertake the initial dismantling of the submarines it currently stores afloat; submarines would not be moved between sites prior to initial dismantling. Further submarines yet to leave service would be dismantled at Devonport Dockyard. No further dismantling would take place at Rosyth once the seven submarines currently stored there have been dismantled.
The MoD proposed option is to undertake initial dismantling at both Devonport and Rosyth Dockyards.

As part of the consultation response questionnaire Question 3 asks: *What are your views on the candidate sites for where the radioactive waste is removed from the submarines? Do you think any significant options have been left out?*

In order to answer this question comprehensively it is considered that the multi criteria used to assess each of the proposed sites must be investigated thoroughly, See Appendix A – Criteria used to assess SDP sites.

The criteria included or excluded from the decision process can have a significant impact in the overall outcome. One criterion that was not considered was the transport of waste from the proposed site to the proposed Interim storage site until disposal.

In responding to this question the Council needs to be fully satisfied that the process that has determined the appropriate sites has been robust, flawless and inclusive.

5. Proposals for storage of waste

High Level Waste (HLW):
After submarines leave service the nuclear fuel is removed and taken for storage at the national facility in Sellafield, - this is not part of the SDP it is an existing activity that has taken place at Devonport Dockyard for many years and will continue in the future.

Low Level Waste (LLW):
Any low level waste generated such as ventilation ducting drains etc. are disposed of through existing disposal routes currently available at the LLW repository in Cumbria.

Intermediate Level Waste (ILW):
There is no disposal route currently available for ILW so it must be stored until it can be disposed of in the UKs proposed Geological Disposal Facility (GDF). As there is currently no GDF facility available storage facilities will therefore be designed to hold waste for up to 100 years.

Interim storage options have been identified in generic terms as types of site owned by either the MoD, industry or the NDA.

The MoD's proposed way forward on interim storage options is:

> "*To continue working closely with NDA and wider government to assess whether it would be more cost effective and beneficial to use NDA storage facilities or to develop a new one for SDP. If this assessment found in favour of an NDA options, we would then ask NDA to develop a suitable storage solution for SDP. To do this, the NDA would need to follow its own processes and governance arrangements to identify which of its storage facilities and sites would be used*" (Submarine Dismantling Project Consultation Document Chpt 8: 8.7.2)

Scottish Government policy for ILW differs from the policy in England and Wales and is for long-term management in near-surface, near-site facilities. It is not, however, applicable to waste arising from decommissioning of out-of-service nuclear submarines. The SDP document does not cover the implications of the difference in policy between Scotland and England, for the proposed disposal of the ILW and is an issue where further clarification may be sought.

The environmental effects of storing ILW are directly associated with the construction of the facility and the amount of land lost to the building itself. The scale of the effects depends on the size of the facility, which in turn is dictated by the size of the ILW container.

The mode and frequency of transport needed to move ILW that has been removed from the submarines will depend on a number of factors, including the method of initial dismantling adopted and the location of the storage site.

The implications of transportation of ILW, to the preferred option of an existing site owned by the NDA is an issue which needs to be fully explored and measured against the environmental and social impacts of storing the waste at the site at which it occurs.

6. Implications for Copeland

The main implications for the current preferred methods are:

- The possibility that ILW may be stored at Sellafield
- That it will have to be transported to the GDF at some point

The SDP document has given clear direction that the MoDs preferred method of dealing with ILW is to continue working with the NDA to investigate the possibility of using NDA facilities until the final disposal in a GDF facility.

Sellafield is one of the potential options for longer term storage for ILW from SDP. Longer term disposal of such waste could be included in any GDF facility.

Any storage facility must be built to store waste for the next 100 years as no decision has been made about the location of a proposed GDF it will be a long time before it is ready to receive waste. Furthermore if no GDF facility was built the ILW could remain at the storage facility for much longer than originally anticipated.

The option of transporting the waste does not align with policy on the non-proliferation of waste. The environmental and social implications of storing and transporting nuclear waste need to be fully explored and alternative options exhausted before any decision is made.

It is also considered that transportation of nuclear waste from the submarines is an important criterion which was over looked in the criteria used to assess possible sites used to dismantle the submarines. If the onward transportation of the removed waste was taken into consideration the preferred dismantling sites may also have altered.

7. Way Forward

The submarine dismantling project and all of the proposed methods outlined above for dismantling and storage of waste are currently under consultation. The consultation period will close on the 17th February 2012. A suggested response for members consideration is attached as Appendix C – Copeland Borough Council response to the SDP consultation.

This is an opportunity for the Council to express any concerns arising over the SDP process and preferred dismantling strategy. Existing berthing capacity will be exceeded by 2020 so there is some urgency in progressing the SDP from the MoD perspective. However, while we recognise the need for decisions in this process it is advisable that all possibilities are explored as the legacy and burden on communities of ILW and HLW will be imposed upon host communities for a significant period of time.

The major concern for Copeland is the storage of nuclear waste. The fate of the HLW or the reactor spent fuel transfer to Sellafield seems to be outside the scope of the SDP consultation but nevertheless the transfers are relevant to Copeland Borough Council's overview of the full impacts of defueling and decommissioning of nuclear submarines.

There is also a need to establish the inventory of radioactive waste requiring disposal at a proposed GDF. If the proposed way forward is to store ILW at a NDA site then there is a need to discuss the environmental and social impacts placed on the host community and the potential community benefits contributions arising as a result.

8. List of Appendices –

Appendix A – Criteria used to assess SDP sites.
Appendix B - Candidate Sites for Initial Dismantling
Appendix C – Copeland Response to the SDP consultation

9. Consultees

Appendix A – Criteria used to assess SDP sites

Initial Dismantling		Interim ILW Storage	
Primary Screening Criteria			
1A	**Coastal site location** *(Site must be accessible by sea)* **Dismantling must be conducted on a coastal site.** This is essential to enable access to the dismantling site for the submarine. A coastal site is defined by the 1949 Coastal Protection Act, as amended. Essentially this means that the site must be located adjacent to a body of tidal water (sea, bay, estuary or river as far as the tidal flow) to enable the submarine to be removed from the sea for dismantling. Additional dredging requirements should be avoided.	2A	**New store construction** *(Can a new store be built?)* **New build will only be considered on sites that are owned or operated on behalf of the MOD[6].** The risk of developing capital facilities (bespoke to SDP) on privately owned or controlled sites, without long-term commercial guarantees, would be too great. For example, if the use or the ownership of the site were to change then the MOD may no longer be able to use the facility for its intended purpose.
1B	**Physical capacity** *(Is there enough space and / or facilities?)* **The dismantling site must have sufficient physical capacity to enable secure dismantling activities to be undertaken.** The threshold for a site to be considered as a dismantling facility is the requirement for an existing permanent ship handling capability for the submarines within the scope of the project and sufficient area to provide a lay apart area. The MOD has assumed that it would not be cost effective to build a new dock or ship handling facility, where these facilities are already available in some locations.	2B	**Existing store capability** *(Can store accept SDP ILW?)* **Existing storage facilities must be compatible with or adaptable to the proposed technical option for dismantling and interim storage of waste.** The threshold for an existing store to be considered as a candidate would be determined by the technical requirements for the storage of SDP waste (such as capacity, security, shielding and handling) and the feasibility of the modifications required to meet them.
		2C	**Physical capacity** *(Is there enough space and facilities?)* **For a new build facility there must be sufficient available footprint for the construction of the store.** This minimum footprint represents the smallest area which must be available to accommodate the new store. If there is insufficient available space on the site, then the facility cannot be constructed. This minimum threshold assumes security and road infrastructure are already in place. Minimum area required varies across the technical options with RC storage requiring more space than RPV storage or packaged waste. **For the use of existing store(s) there must be sufficient capacity in the store(s).** This criterion reflects the fact that, although the store(s) may not be full at this time, the owner / operator may have already allocated the capacity to other future waste streams.
Secondary Screening Criteria			

Initial Dismantling		Interim ILW Storage	
1C	**Port access** *(Access is required to port facilities)* **There must be suitable port access for submarines.** The method for transporting the submarine to the dismantling facility is yet to be determined. However, it will certainly be some form of sea transportation (e.g. towing or heavy lift vessel) and therefore the dismantling site must have suitable port access. Factors determining suitable port access will include the physical space required for manoeuvring the towed or transported submarine, the depth of the required channel and the strength of the tidal flow (which will determine how readily the submarine can enter the port).		
1D	**Legal or contractual commitments** *(Are there barriers to the use of a site?)* **There must be no contractual or legal commitments impeding use of land**. The MOD would not want to challenge the existing long-term contractual or legal status of the proposed site(s).	2D	**Legal or contractual commitments** *(Are there barriers to the use of a site?)* **There must be no contractual or legal commitments impeding use of land**. The MOD would not want to challenge the existing long-term contractual or legal status of the proposed site(s).
1E	**UK organisational control** *(Site must remain under UK control)* **The site shall remain under UK organisational control and shall not be under risk of transfer from UK control**. For security reasons, the MOD requires that the dismantling operation remains under UK control at all times. There must be a mechanism in place to ensure that the site remains under UK organisational control for the required duration of tenure (at least 30 years). This threshold is particularly relevant to privately owned sites which could potentially be sold to foreign buyers. However, a site would still	2E	**UK organisational control** *(Site must remain under UK control)* **The site shall remain under UK organisational control and shall not be under risk of transfer from UK control**. For security reasons, the MOD requires that the waste being stored remains under UK control at all times. There must be a mechanism in place to ensure that the site remains under UK organisational control for the required duration of tenure (100 years). This threshold is particularly relevant to privately owned sites which could potentially be sold to foreign buyers. However, a site would still

Initial Dismantling		Interim ILW Storage	
	pass the threshold if arrangements were in place to prevent a sale that was not in the interests of national security.		pass the threshold if arrangements were in place to prevent a sale that was contrary to the interests of national security. NB: This criterion assumes that ILW arising from SDP will remain classified.
1F	**Security of tenure** *(Site needed for 30 years)* **Location must be available and have security of tenure for at least 30 years** (the estimated duration of dismantling activities based on a throughput of approximately 1 submarine per year). Once a dismantling site(s) has been selected the MOD would not want to have to change location purely because the tenure of the site is too short and the site becomes unavailable. This would be expensive and time-consuming.	2F	**Security of tenure** *(Site needed for up to 100 years)* **Location must be available and have security of tenure for at least 100 years** (the maximum estimated duration before a Geological Disposal Facility is assumed to be available to receive SDP waste). Once a storage site(s) has been selected the MOD would not want to have to change location purely because the tenure of the site is too short and the site becomes unavailable. This would be expensive and time-consuming.
1G	**Topography** *(Must be suitable for dismantling)* **Topography must not prevent use of site for dismantling.** The topography of the site covers all of the physical characteristics of the area. Sites will be excluded from consideration if topography means that dismantling is not physically practicable. Local knowledge and professional judgement will be required to assess this. Relevant factors are likely to include sea cliffs, unstable land and steep slopes.	2G	**Topography** *(Must be suitable for storage facility)* **Topography must not prevent use of site for storage.** The topography of the site covers all of the physical characteristics of the area. Sites will be excluded from consideration if topography means that storage is not physically practical. Local knowledge and professional judgement will be required to assess this. Relevant factors are likely to include sea cliffs, unstable land and steep slopes.
1H	**Compatibility with site operations** *(Existing or planned operations)* **The planned dismantling activities must be compatible with the operations, both current and planned, on the site**. Examples of incompatibility would include activities competing for physical space and	2H	**Compatibility with site operations** *(Existing or planned operations)* **The planned ILW storage activities must be compatible with the operations, both current and planned, on the site**. Examples of incompatibility would include activities competing for physical space and

Initial Dismantling		Interim ILW Storage	
	facilities; it could also include the dismantling being incompatible with the main purpose and mission of the site. Where potential conflicts exist it will be the decision of the site owner to prioritise activities and decide whether dismantling is a compatible activity.		facilities; it could also include storage being incompatible with the main purpose or mission of the site. Where potential conflicts exist it will be the decision of the site owner to prioritise activities and decide whether storage is a compatible activity.
1I	**Operational safety issues** *(Must be able to manage safety risks)* **There must be no unacceptable operational safety issues arising from existing activities on or off site.** In common with any activity, there will be safety issues arising in the dismantling process. However, unacceptable operational safety issues are defined as safety risks that cannot be mitigated (or managed) effectively. Examples might include proximity to flying operations or firing or bombing ranges.	2I	**Operational safety issues** *(Must be able to manage safety risks)* **There must be no unacceptable operational safety issues arising from existing activities on or off site.** In common with any activity, there will be safety issues arising in the dismantling process. However, unacceptable operational safety issues are defined as safety risks that cannot be mitigated (or managed) effectively. Examples might include proximity to flying operations or firing or bombing ranges.
1J	**License conditions** *(Obtain and maintain licence for 30 years)* **The site must be capable of radiological dismantling under license conditions.** The dismantling activities will need to be undertaken under a nuclear site licence (as issued and regulated by the Health and Safety Executive). It must be possible to demonstrate to the regulatory authorities that the dismantling activities can be carried out safely. There must be no factors which would prevent the extension of an existing licence to cover dismantling activities, or would prevent the obtaining of a licence on an existing authorised site. Environmental permitting will also be required and there should be no factors which would prevent this.	2J	**License conditions** *(Obtain and maintain licence for 100 years)* **The site must be capable of ILW storage under license conditions.** The storage will need to be undertaken under a nuclear site licence (as issued and regulated by the Health and Safety Executive). This means that it must be possible to demonstrate to the regulatory authorities that the storage can be carried out safely. There must be no factors which would prevent the extension of an existing licence to cover ILW storage activities, or would prevent the obtaining of a licence on an existing authorised site, as it is assumed that a nuclear site licence would be required for the long-term storage of ILW. A licence would need to be maintained for up to 100 years and no known factors should be present to prevent this (licence will be

Initial Dismantling		Interim ILW Storage	
			subject to regular review). Environmental permitting will also be required and there should be no factors which would prevent this.
		2K	**Receipt of ILW** *(Access for import of waste is required)* **The location must provide a means to receive ILW.** Unless the same site is selected for both initial dismantling and interim storage, then it is assumed that the waste will need to be transported between the two sites. If ILW is to be stored as a Reactor Pressure Vessel (RPV) or a Reactor Compartment (RC) the requirements for receipt will be very different. Due to the size and weight of the RC, sea transportation will be required and hence only coastal sites can be considered. The current project assumption is that RPVs, similarly, can only be transported by sea but this remains under review.

Source: Submarine Dismantling Project Site Criteria & Screening Paper May 2011 Pg. 12-17

Appendix B – Candidate Sites for Initial Dismantling.

Key:

Y	Assessed as passing criterion
N	Assessed as failing criterion
	Not assessed due to failing primary criteria

ID	Site	Owner / Operator	Coastal site	Physical Capacity	Port Access	Legal or contractual commitments	UK organisation control	Security of tenure	Topography	Compatibility with site operations	Operational safety issues	License conditions
			1A	1B	1C	1D	1E	1F	1G	1H	1I	1J
1	HMNB Devonport	MOD	Y	N[7]								
2	Devonport Royal Dockyard	Babcock International Group Plc	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3	HMNB (Clyde) Faslane	MOD	Y	Y	Y	Y	Y	Y	Y	N[8]	N[7]	Y
4	HMNB (Clyde) Coulport	MOD	Y	N[9]								
5	Rosyth Royal Dockyard	Babcock International Group Plc	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
6	Aldermaston	AWE, UK Government	N	N								
7	Burghfield	AWE, UK Government	N	N								
8	Barrow-in-Furness (Devonshire Dock Complex)	BAE SYSTEMS Marine Limited	Y	Y	N[10]	Y	Y	Y	Y	N[11]	Y	Y

9	Neptune Reactor, Fuel Production Plant, Derby	Rolls Royce Marine Power Operations	N	N								
10	Dounreay	DRSL, NDA, UK Government	Y	N[8]								

[8] Site facilities are dedicated to maintaining the In-Service Submarine Programme and the Continuous At Sea Deterrent.
[9] No existing ship handling facilities (docks or ship lifts).
[10] Adverse tidal conditions and port access constraints.
[11] Site facilities and resources dedicated to the Submarine build programme.

			Coastal site	Physical Capacity	Port Access	Legal or contractual commitments	UK organisation control	Security of tenure	Topography	Compatibility with site operations	Operational safety issues	License conditions
11	Harwell	RSRL, NDA, UK Government	N	N								
12	Winfrith (Research Sites Restoration Limited)	NDA, UK Government	N	N								
13	Sellafield (including Windscale licensed site)	Sellafield Limited, NDA, UK Government	Y	N[8]								
14	LLWR, Drigg	NDA, UK Government	N	N								
15	Oldbury Power Station	Magnox, NDA, UK Government	Y	N[8]								
16	Wylfa Power Station	Magnox, NDA, UK Government	Y	N[8]								
17	Trawsfynydd Power Station	Magnox, NDA, UK Government	N	N								
18	Chapelcross Power Station	Magnox, NDA, UK Government	Y	N[8]								

			Coastal site	Physical Capacity	Port Access	Legal or contractual commitments	UK organisation control	Security of tenure	Topography	Compatibility with site operations	Operational safety issues	License conditions
19	Hunterston A Power Station	Magnox, NDA, UK Government	Y	N[8]								
20	Berkeley Technology Centre	Magnox, NDA, UK Government	Y	N[8]								
21	Bradwell Power Station	Magnox, NDA, UK Government	Y	N[8]								
22	Hinkley Point A Power Station	Magnox, NDA, UK Government	Y	N[8]								
23	Sizewell A Power Station	Magnox, NDA, UK Government	Y	N[8]								
24	Capenhurst	Sellafield Limited, NDA, UK Government	N	N								
25	Springfields	Springfields Fuels Limited, NDA, UK Government	N	N								
26	British Energy reactor sites (7 sites)	British Energy Ltd	Y (some sites)	N[8]								

			Coastal site	Physical Capacity	Port Access	Legal or contractual commitments	UK organisation control	Security of tenure	Topography	Compatibility with site operations	Operational safety issues	License conditions
27	Other Commercial Sites	Various	N	N								

Source: Submarine Dismantling Project Site Criteria & Screening Paper May 2011 Pg. 18-22

Appendix C – Copeland Response to the SDP Consultation

Submarine Dismantling Consultation Questions and Feedback Form

Please answer as many questions as you wish to – you do not have to answer them all.

Q1. What are your views on the overall objectives for the dismantling submarines that have left service? [chapter 4]

Enter your response here: The long term storage of submarines in ports that require constant human maintenance and intervention is clearly an unfeasible solution. It is agreed that dismantling and then, where possible, recycling the materials and disposing of the hazardous and non-recyclable components in a responsible manner appears to be the most efficient and effective means of dealing with the submarines.

The storing of ILW until a GDF facility is available needs due consideration. As there is currently no such facility in the planning process it is possible that the storage of ILW may be for a prolonged period of time (much longer than the estimated earliest availability date of 2040). Therefore the process of storing ILW and the proposed interim storage facility must be given due consideration. It is considered that further exploration of the objective:

"Storing ILW until a storage route is available" is needed. Possibly:

- Storage of ILW in a sustainable manner and with due consideration of the immediate implications of host communities

Q2. What are your views on the options for how the radioactive materials could be removed from the submarine? Do you think any significant options have been left out? [chapter 6]

Enter your response here: The three options outlined appear credible.

Q3. What are your views on the candidate sites for where the radioactive waste is removed from the submarines? Do you think any significant options have been left out? [chapter 6]

Enter your response here: The information is limited, under the topic siting options for removing radioactive waste, it states that sites where assessed under 3 criteria

1) Green Field 2) Brown Field 3) existing authorised / site locations

Then the list of sites were screened against 1) Coastal location 2) physical capacity -

These 2 methods of screening appear logical and transparent.

These were then assessed against 8 secondary screening criteria and this reduced the options to the 2 remaining proposals. However the criteria used to assess the remaining 4 sites is quite limited and it is considered that it does not take account of the full set of criterion upon which the sites should have been assessed.

Availability of each site to store the ILW removed from the submarines needs further explanation although it is briefly addressed under "Compatibility with site operations", it is not clear as it states it will be the decision of the site owner to prioritise activities and decide whether storage is acceptable".

Transport links to the sites is another key criteria which has been excluded from the process, if the ILW is not to be stored at the site, where it will be removed, then it must be transported to either a NDA or MoD site. The transport links to the area and means of transportation to the proposed site

would therefore be an important factor upon which to assess the suitability of the site for the dismantling process.

A particular concern of Copeland Borough Council is how the dismantled parts will be transported to the Interim storage facility - which may be a NDA site and could be at Sellafield in Copeland.

Also final disposal will be in a GDF and as West Cumbria is the only area currently going through the voluntary process it would seem that it is possible that if the GDF goes ahead that the waste is likely to have to be transported to this area at some stage.

Whilst the Council has no objections to the types of sites being assessed it is considered that the process arriving at the final decision has not been thorough and further consideration should be given to the criteria used in the screening candidate sites for initial dismantling assessment.

The Council has concerns that not all the relevant or correct criteria have been used in the assessment, a transport / storage and disposal of the removed parts are not given due consideration this could have affected the analysis of the options.

Given the next stage of the process (storage / disposal) and its possible location it is considered that due consideration has not been given to all the locations.

Q4. What are your views on the options for which type of site is used to store the intermediate level waste from submarine dismantling? Do you think any significant options have been left out? [chapter 6]

Enter your response here: The focus of the appropriate candidate sites as being either those owned by the NDA or the MoD appears to be a rational assumption.

The proposed way forward is to continue working closely with the NDA and wider government to assess whether it would be more cost effective and beneficial to use NDA storage facilities or to develop a new one for SDP.

However, this document does not give any clarification of the mulit-criteria decision analysis that will be used to assess the effectiveness of the different options. Without this evidence it is impossible to give an educated response on the viability of the 2 different options.

Other than to state that a full robust consultation must be carried out on this stage of the process of whether it would be more beneficial to use NDA storage facilities or to develop a new facility at other sites.

In section 8.7.6 it states that "Our assessment of the storage site options found that there was little separation between the options to store ILW either at the point of generation or remotely." This is in direct contrast with the non-proliferation of waste policy which advocates managing waste at the site at which it arises and is a policy that Copeland would prefer to see implemented.

Further more the economic and environmental implications of transporting the waste needs to be considered. This is only seen as a means for concern in the case of RC separation where the cost and risks of transporting RCs to a remote site would make this option uneconomical.

The SDP document seems to have a presumption in favour of NDA storage facilities. It is felt that full consideration of the potential impacts of transporting the waste and the legacy and implications on the host community must be assessed before this option can be taken forward.

The final destination for the ILW is the GDF facility, the storage facility is seen as an interim measure, however the availability of the GDF is along way off.

Q5. What are your views about the methods used to compare dismantling and storage options, in particular the factors considered to assess their suitability/effectiveness / performance? [chapter 6]

Enter your response here: The different management options for submarine decommissioning have different timings but essentially all result in the same end-point - eventual disposal of ILW in the NDA's GDF repository. However there is almost no useful information about the radioactive waste inventory of nuclear submarines other than a very simplistic summary of 50 tonnes of ILW steel and 176 tonnes of LLW steel activated with cobalt-60 that would require disposal from a typical Trafalgar Class submarine, along with an assertion that "almost all of the radioactivity in the defueled submarine is fixed within solid metal". It is suggested that this is a limited assessment of the potential risks and hazards that may be encountered when dismantling a submarine.

As stated is section 6.3.3 "the main difference between the options is the order and timing in which the size- reduction and storage activities are carried out."

The importance and impact of the above listed activities is barely touched on in this report. This is a critical stage in the process and in order to have confidence in the decision making behind the process a greater level of transparency is required.

Again Mulit Criteria Decision Analysis (MCDA) has been used to establish which method to take forward stressed previously in order to have confidence in the process it is vital that the correct criteria are used in the assessment.

A 'Swing weighting' approach has been used to weight the importance of each criteria again the weight attributed to any given criteria can swing the decision in favour of one option over another. Therefore the process of MCDA can be manipulated through the inclusion/exclusion of certain criteria and by attributing less / more weight to other areas, as stated earlier it is considered that transport is a much under rated criteria which needs to be given full consideration.

The weighting of criteria is of particular importance as it raises a question over the robustness of the conclusion that options involving ILW storage at the point of generation show no net advantage.

The 'Operational Analysis Supporting Document' (para 9.2.1) states that The environment criteria and the health and safety criteria "were not found to discriminate significantly between the options. It is considered that this is not a robust assessment of what are fundamental and key points in assessing the dismantling and storage process.

It also states:

"Options involving ILW storage at the point of waste generation showed no net advantages over other storage categories in terms of either OE or WLC. This was because transport impacts (for storage at remote sites) were balanced by operational impacts (for storage at the point of waste generation."

Taking into consideration policy of non-proliferation of waste and the concerns already expressed about the lack of weight attributed to transport and the impacts of storage on the "Remote" host

community it is considered that the storage / transport of waste is an area that has not been fully investigated and needs to be fully explored before being progressed any further.

Q6. Do you think we have captured all the potential advantages and disadvantages and if not which others would you propose? [chapter 7]

Enter your response here: As stated throughout this report it is considered that the issue of transporting waste is one which has been over looked or not weighted suitably and is an area which needs to be readdressed and given due consideration before moving forward with either strategy.

The potential impacts on the community for hosting the storage of ILW has not been captured. There is no data presented on actual submarine decommissioning and waste management costs.

Q7. Are there any other significant issues or factors you think we have overlooked? [chapter 7]

Enter your response here:

The fate of the spent fuel seems to be outside the scope of the SDP consultation but nevertheless the transfers are relevant to Copeland Borough Council's overview of the full impacts of defueling and decommissioning of nuclear submarines.

Q8. What are your views on our proposals, and associated rationale, for:

a. how we remove the radioactive waste [chapter 8]

Enter your response here: How the radioactive waste is removed will play a part in how and where it can be stored. As stated in the above questions Copeland Borough Council has concerns over the process and the criteria used to assess these options.

We believe that the 3 options outlined are the most feasible, however a more detailed analysis of the criteria and weighting used to determine which process is progressed is needed to instil faith in the process.

b. where we remove the radioactive waste; and [chapter 8]

Enter your response here: There is a presumption throughout the paper that moving the waste to a NDA site is the most feasible solution. This decision has not been fully rationalised and the decision process may be considered flawed if it does not give due consideration to all possible implications for environmental, health and safety and transport impacts. It is considered that to date these considerations have been limited and a much more robust examination is required.

c. which type of site will be used to store Intermediate Level radioactive Waste? [chapter 8]

Enter your response here: Again there is an assumption that an NDA storage site is the more favoured option rather than building a storage facility. Unless it is proven that this is the best solution continued investigation and comparison to developing a new build facility is necessary.

Q9. Do you have any comments on the next stages of decision making process that will follow this consultation? [chapter 9]

Enter your response here: The next stage of the process must be shown to have revisited the areas that have been highlighted in this consultation as lacking in credibility and needing further examination.

Q10. Do you have any comments about how this consultation has been conducted? Did the consultation provide enough information for you to reach views on the key decisions? Did it meet the seven consultation criteria of the government Code of Practice (outlined at Annex D)?

Enter your response here: The timing of workshops has not been very well co-ordinated to allow for meaningful response to what is an extensive consultation document.

Furthermore the initial consultation document is very simplified with none of the evidence base included. The supporting documents are provided on the internet but there are so many that it becomes a very convoluted process trying to find the evidence or rational behind any of the decisions made in the overarching SDP document.

Environmental Questions

Please refer to the Environmental Report and Non-Technical Summary for the information you need to answer the Strategic Environmental Assessment questions.

Q11. Do you think that the Environmental Report has captured the significant environmental effects of the SDP options? If not, what effects do you think we have missed, and why?

Enter your response here: In section 2.3 of the Strategic Environmental Assessment (SEA) Non-technical summary it states that the MoD had identified the sites of Devonport Dockyard and Rosyth Dockyard as potential sites and the document then goes on to assess the environmental impacts in relation to these 2 sites only.

However it is considered that doing an assessment of only the 2 sites is very limited and does not get an overall assessment. In order to give a full indication of the advantages and disadvantages it would be more insightful to have done an assessment of the sites shortlisted. It is recognised that to do an assessment of all 8 sights identified would be time consuming but it is reasonable to expect that an assessment of the 4 sites that were identified through the second stage of the process should have been carried out.

Q12. Is there any other baseline environmental information, relevant to the SEA that we have not included? If so, please provide details.

Enter your response here: Table 3.1 outlines 14 issues of baseline information. We are pleased to see that transport has been included as one of the baseline issues.

The table, while useful as a summary does not provide any depth as to what is assessed within each baseline. A greater explanation of what each of the baseline headings assessed would be useful. Also how much weight was attributed to each criterion if they were weighted.

An additional criterion of potential to facilitate a storage building to store ILW at point of generation is necessary especially if the NDA option proves not to be credible.

Submarine Dismantling Consultation Questions and Feedback Form

We consider that the sections 4.2 & 4.3 do not fully investigate the feasibility of developing a building to store ILW at the source of generation and further investigation is needed to explore this option.

Q13. Do you agree with the proposed arrangements for monitoring significant effects of the SDP options, detailed in the environmental report? If not, what measures do you propose?

Enter your response here: Provided the potential environmental monitoring measures as outlined in Table 7.3 of the Environmental report are applied to all stages of the process including storage and the impacts of storing the ILW on that community.

Q14. Do you agree with the conclusions of the Report and the recommendations for avoiding, reducing or off-setting significant effects of the SDP options? If not, what do you think should be the key recommendations and why?

Enter your response here: In table 7.2 proposed mitigation measures for submarine dismantling and storage, there is no consideration or mention of the transport of the submarines from the dismantling site to the storage / final disposal destination. In order to ensure sustainability there should be a link between the sites chosen to dismantle the submarines and the location of proposed storage, recycling and disposal as transporting 100s of miles may not be the most environmentally friendly option.

Q15. Are there any other comments you would like to make?

Enter your response here: There are a lot of documents which cover different aspects of this project, which given the size of the project is understandable. However having the information stored in a number of different documents through many different layers has made accessing the information and reasoning process very long and cumbersome. In order to make the process more transparent it would have been useful to highlight the most relevant supporting documents and possibly having a link to them at level 1 alongside the consultation document.

If you wish to add further comment please enter your response here

About you…

- Are you happy for your comments to be published on our website? Yes
- If so, do you want to be named alongside your comments when the responses are published on the website? Yes
- Please add contact details here

Submarine Dismantling Consultation Questions and Feedback Form

- Are you a Local Resident to Devonport or Rosyth Dockyards? No
- If other, please state where?
- Are you representing an Organisation? Yes
- If so, please state which one Copeland Borough Council

You can return your questionnaire either by email attachment to DESSMIS-SDP@mod.uk

Or by post to:

FREEPOST RSKJ-KRAH-YZRJ, Submarine Dismantling Project, C/o Green Issues Communications Ltd, 30-31 Friar Street, Reading, RG1 1DX,

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